

Responses to Comments

January 16, 2007

Part I: Staff responses to written comments submitted in response to
June 30, 2006, Staff Report and proposed Basin Plan amendment

Part II: Staff responses to issues raised at September 13, 2006, testimony
hearing before the Water Board

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INTRODUCTION

Water Board staff received 18 comment letters in response to the release of a draft Basin Plan amendment and supporting Staff Report on June 30, 2006. In September 2006, the Board conducted a testimony hearing, at which 11 stakeholders and residents of the Napa River watershed presented verbal comments. This document responds to all comments received, except for comments and questions raised at the hearing to which Board staff responded directly.

In addition, we have made minor editorial changes to the Staff Report and Basin Plan amendment for clarity and ease of reading, and to correct typographical errors in the June 30, 2006, draft documents. Significant “Staff-initiated Changes” are shown in section III.

In response to a number of specific issues raised by commenters and in conformance with the California Environmental Quality Act (CEQA, see Cal. Code of Regs., title 23, sec. 3777(a)), we have revised and expanded Chapter 7 of the Staff Report, the Regulatory Analyses section. For the reader’s convenience, key sections of Chapter 7 are reproduced at the end of this document, with changes from the June draft noted in underline and strikeout.

**PART I: STAFF RESPONSES TO WRITTEN COMMENTS
SUBMITTED IN RESPONSE TO JUNE 30, 2006
STAFF REPORT AND PROPOSED BASIN PLAN AMENDMENT**

Comment letter no. 1: California Department of Fish and Game

Water Board staff are grateful to the California Department of Fish and Game (DFG) for making staff and resources available to assist in development of the proposed Basin Plan amendment for the Napa River. Numbering in the section below corresponds to numbering in DFG's comment letter (i.e., comment 1.1.2 is the second comment in the first section of DFG's comments).

DFG Comments Section 1: Comments on the proposed Basin Plan amendment

Comment 1.1.1: "The Water Board has correctly characterized the three primary categories of deleterious impacts to adult and juvenile steelhead and salmon attempting to utilize Napa River resources."

We appreciate DFG's concurrence with our findings.

Comment 1.1.2: "The Department supports proposed TMDL sediment target numbers for spawning gravel permeability and streambed scour."

We are glad to have DFG's support for the TMDL.

Comment 1.1.3: "...Portions of the discussion, under "Sources," and Table 2 are difficult to fully understand....The final estimated sediment load to the watershed upstream of the Napa River at Soda Creek cannot easily be determined from the text or Table 2 alone."

To address these comments, we have revised Table 2 and the related text in the Basin Plan amendment Sources Section as follows:

Mean annual sediment delivery rate to channels is estimated to have been ~~274,000~~ 272,000 metric tons per year during the period from 1994 to 2004, which when considered in relation to the land area draining into the Napa River at Soda Creek (e.g., 584 km²), equals 464 466 metric tons per km² land area per year (Table 2). The natural background rate of sediment delivery during this period, absent dams and human-caused erosion is estimated to have been ~~253~~ 252 metric tons per km² per year, which is calculated from Table 2 as follows:

48,000 metric tons/year—sediment deposited in tributary reservoirs
7,000 metric tons/year—sediment discharged through dams on tributaries
92,000 metric tons/year—input to channels downstream of reservoirs
147,000 metric tons/year

147,000 metric tons/584 km²—land area draining to Napa R. at Soda Creek
=252 metric tons/km²/year

Therefore total sediment load in the Napa River at Soda Creek is estimated to have been ~~183~~ 185 percent of natural background (e.g., ~~464/253 = 183~~ 466/252 = 185%) during 1994-2004. ~~Table 1~~ Table 2 breaks down the sediment sources to the Napa River, with annual average rate calculated at Soda Creek over the 10-year study period.

Table 2. Mean Annual Sediment Delivery to Napa River at Soda Creek (1994-2004)

Source	Estimated Mean Annual Delivery Rate (metric tons/yr)
Land areas upstream of dams (e.g., fine sediment discharged from reservoirs)	
▪ Natural Processes	7,000
▪ Human Actions	11,000
Land areas downstream of dams	
▪ Natural Processes:	92,000
▪ Human actions:	
o Channel incision and associated bank erosion	37,300 <u>37,000</u>
o Road-related sediment delivery (all processes)	55,400 <u>55,000</u>
o Surface erosion associated with vineyards and/or livestock grazing	36,700 <u>37,000</u>
o Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing	29,600 <u>30,000</u>
o Urban Stormwater Runoff Urban Stormwater Runoff and Wastewater Discharges	4,000 <u>2,500</u>
TOTAL	271,000 <u>272,000</u>
Notes: Drainage area for Napa River at Soda Creek = 584 km ² . Estimates above do not include sediment deposited and retained in tributary reservoirs, which includes all gravel and sand, and most of the finer sediment input to channels located upstream of the reservoirs. Approximately 104,000 metric tons per year of sediment are deposited in tributary reservoirs, 48,000 metric tons per year of which is derived from natural processes. Above estimates are rounded to the nearest thousandth	

Comment 1.1.4: “The Department supports the magnitude of the load-reduction values proposed in Table 3. (Minor corrections to individual numbers may be necessary). The Department believes that in order to reduce current anthropogenic fine-sediment deliveries by 50 percent it will be necessary to carefully regulate sources from new development proposed on previously undeveloped or abandoned sites. More substantial reductions could be achieved by addressing potential causes of erosion and sediment release from projects in the design phase rather than after project completion....Timber harvesting projects in the Napa River watershed may [also] present relatively greater risk of sediment delivery....[DFG encourages] Water Board participation in the field review of land development projects in the Napa River Watershed that are subject to the California Environmental Quality Act (CEQA) and CEQA-alternative review processes”

We appreciate the comment. Any new development in the watershed is subject to current regulations. Further, Water Board staff are happy to participate, resources permitting, in future field review of proposed projects.

To clarify Table 3 of the Basin Plan amendment, we separated it into two parts (Tables 3a and 3b), and made corrections to the Total Maximum Daily Loads and Allocations section of Basin Plan amendment as follows:

Because dams trap almost all upstream sediment inputs to channels, natural sediment input to channels downstream of dams equals only 62 percent of the total natural background load (e.g. amount that would have been input to Napa River absent dams and human caused erosion). Almost 50 percent of the TMDL can be allocated to human-caused sources, and the TMDL equal to 125 percent of natural background load, can be achieved if human-related sources are reduced to the level of the allocations shown in Tables 3 3a and 3b).

Table 3a. Load Allocations

<u>Source category</u>	<u>Load during 1994-2004</u>		<u>Estimated reductions needed (percentage)</u>	<u>Load allocations</u>	
	<u>Metric tons/year</u>	<u>Percentage of Natural Background</u>		<u>Metric tons/year</u>	<u>Percentage of Natural Background</u>
<u>Land areas upstream of dams</u>					
▪ <u>Natural processes</u>	<u>7,000</u>	<u>4.8</u>	<u>0</u>	<u>7,000</u>	<u>4.8</u>
▪ <u>Human actions</u>	<u>11,000</u>	<u>7.5</u>	<u>51</u>	<u>5,000</u>	<u>3.6</u>
<u>Land areas downstream of dams</u>					
▪ <u>Natural processes</u>	<u>92,000</u>	<u>63</u>	<u>0</u>	<u>92,000</u>	<u>63</u>
▪ <u>Human actions:</u>					
o <u>Channel incision and associated bank erosion</u>	<u>37,000</u>	<u>25</u>	<u>51</u>	<u>18,000</u>	<u>12</u>
o <u>Roads</u>	<u>55,000</u>	<u>38</u>	<u>51</u>	<u>27,000</u>	<u>18</u>
o <u>Surface erosion associated with vineyards and grazing</u>	<u>37,000</u>	<u>25</u>	<u>51</u>	<u>18,000</u>	<u>12</u>
o <u>Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing</u>	<u>30,000</u>	<u>20</u>	<u>51</u>	<u>15,000</u>	<u>10</u>
<u>TOTAL</u>	<u>269,000</u>			<u>182,000</u>	<u>123</u>
<u>Note: Above estimates for loads, percent reductions, and allocations are rounded to two significant figures</u>					

Table 3b. Wasteload Allocations for Urban Runoff and Wastewater Discharges

<u>Point Source Category</u>	<u>Current Load</u>		<u>Reductions needed (percentage)</u>	<u>Wasteload Allocations</u>	
	<u>Metric tons/year</u>	<u>Percentage of Natural Background</u>		<u>Metric tons/year</u>	<u>Percent of Natural Background</u>
<u>Construction Stormwater-NPDES Permit No. CAS000002</u>	<u>500</u>	<u>0.3</u>	<u>0</u>	<u>500</u>	<u>0.3</u>
<u>Municipal Stormwater NPDES Permit No. CAS000004</u>	<u>800</u>	<u>0.5</u>	<u>0</u>	<u>800</u>	<u>0.5</u>
<u>Industrial Stormwater NPDES Permit No. CAS000001</u>	<u>500</u>	<u>0.3</u>	<u>0</u>	<u>500</u>	<u>0.3</u>
<u>Caltrans Stormwater-NPDES Permit No. CAS000003</u>	<u>600</u>	<u>0.4</u>	<u>0</u>	<u>600</u>	<u>0.4</u>
<u>Wastewater Treatment Plant Discharges^a</u>					
<u>City of St. Helena NPDES Permit No. CA0038016</u>	<u>30</u>	<u><0.1</u>	<u>0</u>	<u>30</u>	<u><0.1</u>
<u>Town of Yountville/CA Veteran's Home NPDES Permit No. CA0038121</u>	<u>30</u>	<u><0.1</u>	<u>0</u>	<u>30</u>	<u><0.1</u>
<u>City of Calistoga NPDES Permit No. CA0037966</u>	<u>40</u>	<u><0.1</u>	<u>0</u>	<u>40</u>	<u><0.1</u>
<u>TOTAL</u>	<u>2500</u>	<u>2</u>		<u>2500</u>	<u>2</u>
a. For wastewater treatment plant discharges, compliance with existing permit effluent limit of 30 mg/L of TSS is consistent with these wasteload allocations Note: Above estimates for loads, percent reductions, and allocations are rounded to two significant figures					

TABLE 3. TOTAL MAXIMUM DAILY LOAD AND LOAD AND WASTELOAD ALLOCATIONS

Source category	Load during 1994-2004 (percentage of natural load)	Estimated reductions needed (percentage)	Load allocations (percentage of natural load)
Land areas upstream of dams			
▪ Natural processes	5	0	5
▪ Human actions	8	50	4
Land areas downstream of dams			
▪ Natural processes	62	0	62
▪ Human actions:			
○ Channel incision and associated bank erosion	26	50	13
○ Roads	36	50	18
○ Surface erosion associated with vineyards and grazing	24	50	12
○ Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing	20	50	10
			Wasteload allocation (Percentage of natural load)
○ Urban stormwater runoff	2	50	1
TMDL			125

Comment 1.1.5: “The Department supports and encourages implementation of appropriately aggressive water quality control methods for the River—e.g., adoption of specific water quality objectives for flow in order to more effectively protect critical uses of water to maintain “habitat, fish passage, temperature, and flow enhancement objectives.”

We are grateful for DFG’s concurrence. In order to address flow, we are recommending the suite of actions listed in Table 5.2 of the proposed Basin Plan amendment to protect

or enhance baseflow. Should these actions prove ineffective, we will recommend that the Water Board establish water quality objectives for baseflow to protect salmonid migration and juvenile rearing.

Comment 1.1.6: “The Department suggests that a completion date of 2010, or 2011 at the latest, is still reasonably attainable and may encourage more timely ongoing action by the implementing parties.” (Basin Plan amendment Table 4.1)

Our implementation schedule is based partly on anticipated available Water Board staff time, and public review requirements, for development and adoption of waiver conditions or waste discharge requirements for vineyards and associated land uses.

In the meantime, our aim is to encourage and nurture early implementation of actions that will reduce sediment discharges to the Napa River and its tributaries. We are pleased to note that during the past two years, the Water Board and NOAA Fisheries have certified more than 7,000 acres of Napa River watershed vineyards as part of the Napa Green program, finding that practices at these vineyards are protective of water quality and habitat conditions for salmon and steelhead. Over the next two years, we expect to double the amount of acreage in the watershed that is certified under the program.

Comment 1.1.7: “The Department supports the proposed implementation actions to help restore fish passage in the watershed.” (Basin Plan amendment Table 5.3)

We look forward to working with DFG and other stakeholders in the watershed during implementation of the Habitat Enhancement Plan.

DFG Comments Section 2: Comments on the Staff Report

Comment 1.2.1: “The Staff Report is an impressive, technically sound document that clearly reflects extensive work by Water Board staff.”

We appreciate the involvement of DFG staff in the development and review of the *Napa River Basin Limiting Factors Analysis* and earlier drafts of the Staff Report.

Comment 1.2.2: Referencing Staff Report Table 1, Water Quality Objectives and Sediment-Related Beneficial Uses, the Department notes, “Strictly speaking, Cold Freshwater Habitat and the others refer to titles of beneficial use *categories* and not beneficial uses of water per se. Correction of this seemingly minor point will help

readers, and especially critics, more easily distinguish between what it is that water quality laws and wildlife laws separately address and protect, and why both are necessary, in concert, to protect aquatic habitats.”

We appreciate the comment. We have revised Table 1 in the Staff Report accordingly:

**Table 1. Water Quality Objectives and Sediment-Related Beneficial Uses
Use Categories**

Beneficial Uses <u>Use Categories</u>	Water Quality Objectives	
Cold Freshwater Habitat Fish Migration Preservation of Rare and Endangered Species ¹ Fish Spawning Warm Freshwater Habitat Wildlife Habitat Recreation	Turbidity Sediment Settleable Material Suspended Material	Increase from background <10% where natural turbidity is >50 NTU* Should not cause a nuisance or adversely affect beneficial uses Should not cause a nuisance or adversely affect beneficial uses Should not cause a nuisance or adversely affect beneficial uses
Cold Freshwater Habitat Fish Migration Preservation of Rare and Endangered Species ¹ Fish Spawning	Population and Community Ecology	The health and life history characteristics of aquatic organisms in water affected by controllable water quality factors shall not differ significantly from those for the same waters on areas unaffected by controllable water quality factors
Note: Bold text indicates water quality objective is not being attained.		
*NTU Nephelometric Turbidity Unit		
1 Preservation of rare and endangered species listed under state or federal law as rare, threatened, or endangered. Steelhead within the Central California Coast, including the Napa River and its tributaries, are listed as threatened under the federal Endangered Species Act (ESA). Fall-run Chinook salmon in the Napa River are not listed as threatened or endangered under the state or federal ESA, however, they are rare in Bay Area streams. California freshwater shrimp (federal endangered) have been found in the Napa River and a few of its <u>some</u> tributaries. These shrimp are federally listed as endangered species.		

Comments 1.2.3–1.2.5: Referencing the Detailed Problem Statement, the Department has contributed some observations about additional effects of channel incision on habitat conditions.

We concur in general with DFG’s comments. We have revised the Detailed Problem Statement (Section 2.2) in the Staff Report as follows, beginning with the last bullet:

- Active and rapid channel incision in mainstem Napa River and lower reaches of its major tributaries has greatly reduced quantity of gravel bars, riffles, side channels, and sloughs, and has greatly decreased frequency of inundation of adjacent flood plains. These features and processes provide essential spawning and juvenile rearing habitat for Chinook salmon, which reside primarily in the mainstem Napa River. Therefore, channel incision appears to be a key factor limiting Chinook salmon run size. Channel incision, and associated bank erosion in areas underlain by thick alluvial deposits, also appears to be a significant source of sediment delivery to the Napa River. Shallow groundwater stored in the valley floor adjacent to incised channel reaches is more rapidly depleted during the spring and summer, causing spring and summer baseflow persistence to be reduced, and the quantity and quality of cold pools (e.g., those fed by groundwater inputs) to be diminished.
- Much lower frequency of inundation of adjacent flood plains, as a result of channel incision, contributes to a variety of adverse impacts to aquatic and riparian habitat including:
 - a) Diminished extent of riparian vegetation on the valley floor
 - b) Very poor conditions (in most locations) for recruitment of young stands of riparian tree species, decreasing the diversity of vegetation/habitat types on the valley floor
 - c) Diminished complexity of channel and flood plain topography (e.g., loss of side channels, sloughs, and other flood plain wetland habitats)
 - d) Over the long-term, reduced rates of input of large woody debris to channels (e.g., large/old trees are not being replaced at the rate that they are falling into the channels).

The above changes in vegetation and topography greatly diminish food supply and refuge habitats for fish and other aquatic species in the Napa River and lower tributary reaches. Deposition and storage of fine sediments on the valley floor is also greatly reduced, as is the filtration of nutrients and other natural and synthetic chemical constituents.

Comment 1.2.6: The Department poses several questions about the transition from developing a regulatory regime for human-caused sedimentation, to implementation, especially for parcels less than 40 acres. “Is there a danger that achievement of TMDL goals may be hampered by lack of more direct regulation of sediment discharges from numerous small, but cumulatively significant sources (e.g., small agricultural parcels)? Will the Water Board determine those that have the potential to deliver significant amounts of human-caused sediment discharges to the channel network?

What agency will follow-up over time to ensure that a low sediment discharge parcel doesn't become a high sediment discharge parcel due, for example, to new ownership or land-use practices?"

The types of lands where we propose to regulate nonpoint source discharges of sediment (and other pollutants of concern) in the Napa River watershed include the following types, as defined for the Napa County Land Use Database and in the Napa County Baseline Data Report (Jones & Stokes, 2005).

- 1) Farming (e.g., vineyards and other types of farming);
- 2) Grazing;
- 3) Rural Lands; and
- 4) Parks and Open Space.

In addition to the above listed types of lands, all publicly owned roadways also are included in categories that will be regulated as described in Table 4.4. For parcels defined as farming, grazing, rural lands, and/or parks and open space, we anticipate that all parcels larger than 40 acres will be regulated by the Water Board under waste discharge requirements (WDRs) and/or conditional waivers of WDRs. The Water Board may also regulate a subset of all parcels between 10 and 40 acres in size where "ground disturbing activities are occurring over a large proportion of the property or in sensitive areas [and/or] there is an extensive road network" (see Section 6.2 Key Considerations Regarding Implementation, Staff Report of June 30, 2006). There are approximately 3,400 parcels within the Napa River watershed within the unincorporated area that are larger than 10 acres, comprising 92 percent of the total unincorporated land area within the unincorporated area (Napa County, 2005). Minimum parcel size and/or sediment discharge thresholds that would trigger the requirement to obtain a permit or waiver for the discharge of sediment and other pollutants of concern (e.g., nutrients, pathogens, heat) will be developed as part of the process of developing General Waste Discharge requirements and/or waiver conditions for vineyards.

Comment 1.2.7: "What future water quality funding will be available for (a) the implementation of sediment source inventories and controls, (b) the broader set of habitat enhancement actions needed to conserve steelhead and salmon populations, (c) a monitoring program to evaluate progress in restoring steelhead and salmon populations, and (d) a monitoring program to evaluate progress in restoring water quality and conserving salmonid populations? Wherever possible, federal, state, and local agencies should work collaboratively to recommend grant funding for these actions."

While we look forward to continuing collaboration with DFG and other state and federal agencies to collectively enhance our capability to identify and fund exceptional projects, we cannot assume that grant funding will pay for all or most of the cost of sediment control and habitat enhancement actions, and/or related monitoring called for under the proposed Basin Plan amendment. We are cautiously optimistic that public funds will continue to provide substantial funding for water quality and habitat enhancement efforts. Beyond that, local agencies and groups will need to continue and in some cases enhance their support of local projects designed to protect and restore the fishery in the Napa River watershed.

Comment no. 1.2.8: “The Staff Report states that incentives for proactive participation by the nonpoint source discharge community may include permit waivers and more favorable implementation schedules. Please define “favorable implementation schedules.” Does this phrase mean allowing more time to meet targets? If so, please refer to Comment Number 6, above [1.1.6].

We have revised the next-to-last bullet in Staff Report Section 6.2, Key Considerations Regarding Implementation, as follows:

- State funding will be available to support (in part) the implementation of sediment source inventories and controls, the broader set of habitat enhancement actions needed to conserve steelhead and salmon populations, and a monitoring program to evaluate progress in restoring water quality and conserving salmonid populations. ~~Other incentives for proactive participation may include permit waivers and more favorable implementation schedules.~~

Comment nos. 1.2.9 and 1.2.10: “The Napa Green Program is a relatively well-designed and regionally innovative education, outreach, and self-compliance program. However, does it provide as adequate a set of controls as is found, for example, in the Water Board’s individual or general water quality permits—e.g., monitoring of best management practices (BMPs), restoration projects, erosion control plans, and water conservation plans? Does the Napa Green Program have approved quality control or implementation-effectiveness/validation monitoring programs in place? Experience suggests that farm plans, photographs, monitoring data, and other information are proprietary under the Napa Green Program. Will this hamper accountability of sediment control by participants of the Program?...The proposed Amendment specifies the implementation of farm plans certified under the Napa Green Certification Program. As these plans are not public documents and the Napa Green certification board is not a regulatory government body,...the Board should consider mirroring the requirements of the farm plan in its conditions of approval

and retain the option of requiring conditions in addition to those specified in certified farm plans.”

The Napa Green program involves a comprehensive assessment of natural conditions and farming practices, including the initiation and maintenance of a suite of management practices designed to protect water quality, steelhead, and salmon. Certification under the program is granted by third-party regulatory agencies including NOAA Fisheries and the Water Board, based on review of farm plans prepared under the program and site visits. Certifications must be renewed every five years, based on follow-up site visits and review of previously approved plans.

Farm plans prepared under the program address all aspects of farming operations that may influence water quality and fisheries habitat conditions including erosion control practices, drainage, irrigation, frost protection, roads, chemical applications, riparian corridor setbacks, aquatic and riparian habitat management, fish passage, and water use and management. The management practices recommended under the program have been reviewed by an independent technical advisory committee comprised of academic, private consulting, and resource agency scientists. Our experience supports our finding that this is a comprehensive and rigorous agricultural water quality control program.

In addition to Napa Green certification, and consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (SWRCB, 2004), the Water Board will regulate Napa’s agricultural lands (land types listed in Tables 4.1–4.4 in the proposed Basin Plan amendment) through issuance of waste discharge requirements (WDRs) for vineyards and/or conditional waivers of those WDRs. Each discharger will be required to submit an erosion control plan that includes a baseline inventory of the property for sediment delivery sites and unstable areas, and a description of site-specific management measures that will be implemented to control and/or prevent human-caused sediment delivery to stream channels. Further, we will require a monitoring program to verify implementation and evaluate effectiveness of management practices to protect water quality.

We expect the conditional waivers to be considered by the Water Board before the fall of 2010. In advance of an adoption hearing before the Water Board, we will request comment from DFG and other interested agencies on the proposed program including the proposed conditions of approval. We value DFG’s input and look forward to collaborative development of an effective water quality control program for these land uses.

Comment 1.2.11: “The Department requests that, where possible, the Water Board carefully and stringently condition and, when appropriate, deny permits of new

vineyard development projects where project proponents have historically disregarded prior permit conditions or been subject to prior enforcement actions.”

The Water Board intends to implement an effective water quality control program that will include effective compliance and enforcement elements and is consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (SWRCB, 2004) and *Water Quality Enforcement Policy* (SWRCB, 2002).

Comment 1.2.12: “Inspections ...of properties participating in the Napa Green Program ...(by qualified geologists, engineers, or scientists) should be conducted two years after Program certification to determine eligibility for a conditional waiver of WDRs. Reliable third-party monitoring should be required if Napa Green certified farmers are to receive conditional waivers of WDRs. At five years, re-certification inspections should be conducted and re-certification granted if BMPS and restoration enhancements have been implemented as pledged in the original farm plan.”

Eligibility for conditional waiver of WDRs will be fully evaluated as part of the Water Board’s process of developing WDRs waiver conditions. In the meantime, we encourage DFG to continue to evaluate ways in which the Napa Green certification process can be improved. Based on our field inspections and participation in the Napa Green certification process to date, Water Board staff assert that seasonal and/or annual photo monitoring of management practices, required to document implementation actions and additional conservation practices specified in the certified farm plan, may provide adequate oversight for program participants. We agree with DFG that the five-year cycle for follow-up inspections and recertification is reasonable.

Comment 1.2.13: “The Rutherford Dust Restoration program is a good example of a program operated by local landowners that is driving proactive, presumably long-term TMDL implementation....Can the Napa Green Program duplicate this level of achievement? What assurance is there that [Napa Green] will survive potential year-to-year changes in levels of grant funding? If the Napa Green Program *were* to end, what TMDL implementation action would be required of previously certified farms once current certifications expire?

There is no guarantee that either program will be sustained over the long-term if at least partial funding from grant programs is not forthcoming. However, if the Napa Green program were to end, we anticipate that properties certified under the program could continue to qualify for the waiver of WDRs provided that the lands continue to be managed as specified in the farm plan, or an updated plan is submitted and approved by the Water Board.

Comment 1.2.14: “The Department fully supports the adoption of guidelines for maintaining in-stream flows to protect and recover anadromous salmonid populations. This should be a regular part of the process for review and approval of new appropriative water right permits for stream channels within the coastal watershed from the Mattole River south to San Francisco, including the Napa River.”

We appreciate DFG’s concurrence with this recommended action.

Comment 1.2.15: “Long-term third-party monitoring of appropriative and riparian water rights users should be initiated. Existing regulations and permit conditions need to be enforced to the extent possible. Outreach, education, and incentives/disincentives to promote reasonable and legal water diversions should be developed.”

We agree. These and other issues are being considered as part of the State Water Board’s North Coast Instream Flow Policy.

Comment 1.2.16: “A comprehensive fish barrier assessment, utilizing Department protocols, should be a high priority. The Water Board should encourage the Napa County Resource Conservation District to continue to pursue grant funding for such an effort.”

We appreciate DFG’s support for this recommended action.

Comment letters no. 2 and 3: City of Calistoga and City of Napa

Comment letters from the cities of Calistoga (Comment Letter no. 2) and Napa (Comment Letter no. 3) are similar, sharing the same language in many instances and reiterating the same comments. For clarity and ease of reading we have aggregated their comments and staff's responses below.

Comment 2.1/3.1: "The Regional Board does not suggest that the sediment TMDL could be met by increasing the Napa River's assimilative capacity. In fact, the Regional Board did not find ... any connection between low flows and sedimentation in the Napa River....As increasing flows is not directly tied to achieving the sediment TMDL, the flow recommendation should not be incorporated into the TMDL implementation plan. If the Regional Board wants to consider actions that can be taken to enhance the fishery in addition to meeting the TMDL, it should do so outside of the context of the TMDL....The [cities of Calistoga and Napa hereby[request] that the Regional Board separate its consideration of minimum stream flows from its consideration of what measures would successfully implement the sediment TMDL on the Napa River."

As explained in the first section of the proposed Basin Plan amendment, the Water Board's goals include restoration of the steelhead and Chinook salmon fisheries and enhancement of the aesthetic and recreational values of the river and its tributaries. These goals are indeed broader than solely achieving the sediment TMDL and related water quality objectives. The TMDL provides a framework for continued work and engagement with stakeholders in the watershed to restore and protect the beneficial uses of the Napa River. It opens doors to potential future funding from and engagement of other public entities. We assert that it is fitting and appropriate to include in the Basin Plan amendment the full range of recommended actions to protect and/or enhance flows in the river, as needed to achieve the fisheries, aesthetic, and recreational goals.

Low flows and sedimentation are both issues that need to be addressed if the fisheries are to be restored and protected. Staff asserts that if our holistic approach – implementation of both the sediment TMDL and the habitat enhancement plan – is adopted, the health of the fishery will inevitably improve. The aim of the TMDL is not to increase the river's assimilative capacity for sediment, but to improve the fishery.

Comment 2.2/3.2: "The City's drinking water supply, and possibly the environment, would be profoundly impacted if the Regional Board were to adopt the proposed Basin Plan amendment as written....As the City would have to develop new sources of drinking water, it would have to raise water rates dramatically, which would have the greatest impact on its poorest customers."

We respectfully disagree. The proposed Basin Plan amendment does not require the Cities to develop new drinking water sources.

We propose a collaborative, voluntary planning process involving local, state, and federal agencies in the development of a plan that will describe and analyze potential alternatives for water resource management and jointly resolve water supply reliability and fisheries conservation concerns.

In this regard, the proposed Basin Plan amendment recognizes the regulatory functions and efforts of the State Water Board's, Division of Water Rights, as well as voluntary actions by the Napa County Resource Conservation District to monitor baseflow, develop minimum flow guidelines to protect salmonids, and implement a related public education program.

To clarify our intent, we have added language to a subsection of Staff Report Section 6.6.1, and revised Table 5.2 in the proposed Basin Plan Amendment

(6.6.1) Coordination and Collaboration between Local, State, and Federal Government Agencies

We encourage local, state, and federal agencies to participate in a cooperative partnership to develop a plan that would describe and analyze potential alternatives for water resource management that could jointly resolve water supply reliability and fisheries conservation concerns. Through collaboration and coordination between local municipalities, NOAA Fisheries, California Department of Fish and Game, and the Water Board, there ~~may will~~ be an opportunity opportunities to enhance flow for fish, while also enhancing the reliability of municipal water supplies. As indicated in the ~~2050 Napa Valley Water Resources Study (West Yost and Associates, 2005)~~, the ability of Napa Valley municipalities to meet future projected water supply demands during a critical dry year or period of dry years is a significant concern. Key priorities in developing a reliable water supply to meet future projected demand include: a) a major upgrade to the Jameson Canyon potable water treatment plant to enable use of the full appropriation of imported water available from the State Water Project; b) increased production of tertiary treated wastewater and infrastructure improvements to deliver the treated wastewater where it can be used; and c) obtaining water rights licenses for Lake Hennessey and Bell Canyon Reservoir, as needed to firmly or officially establish the water supply associated with these reservoirs; and d) additional reservoir capacity to facilitate greater operational flexibility in utilizing State Water Project and local surface water supplies.

Through ~~the~~ participation in such a collaborative process, it may be possible to enhance the amount of water that is ultimately available from current and proposed water supply facilities, while also enhancing the

flow regime for fish. ~~In contrast, lack of collaboration may contribute to an unpredictable and/or reactive process that may diminish municipal water supply and result in a flow regime downstream of dams that is less favorable for fish.~~ Also, by working together to jointly resolve fisheries conservation and water supply concerns, the probability of obtaining state and/or federal funds to support upgrades to existing and/or proposed water supply facilities, would be enhanced, and as such, provide greater operational flexibility to enhance flows for fish downstream of municipal reservoirs normal and above normal runoff years.

Staff asserts that it will be in the interest of local municipalities to proactively craft water resources enhancement strategies that contribute to conservation of threatened and endangered species and increase reliability of drinking water supplies, as opposed to responding to legal challenges regarding impacts of current operations of existing surface water reservoirs that could arise under Section 5937 of the California Fish and Game Code, and/or the Public Trust Doctrine. For example, Conn Dam does not have an outlet structure to allow controlled releases to lower Conn Creek, and the water rights permit does not require any bypass flows to protect fish and wildlife downstream of the dam. The storage capacity of Lake Hennessey is equal to approximately 150 percent of average annual inflow, which would suggest that reservoir operations substantially reduce base and peak flows in lower Conn Creek in most years. Prior to construction of Conn Dam, Conn Creek may have been the most important tributary for steelhead in the Napa River watershed as suggested by: a) extensive occurrence of gravel-bedded pool-riffle channel reaches throughout much of the length of Conn Creek and portions of its major tributaries including Chiles, Sage, and Moore creeks; b) favorable baseflow persistence; c) results of historical fisheries surveys (Leidy et al., 2005); and d) accounts of old-timers. Rainbow/steelhead trout and other native fish and wildlife species continue to be present in small numbers in lower Conn Creek.

Water Board staff will meet with municipal staff and elected officials, representatives of the state and federal agencies listed above, and other interested parties over the next few months to discuss the idea of establishing a water resources planning forum to jointly resolve water supply reliability and fisheries conservation concerns.

Table 5.2 Recommended actions to protect or enhance baseflow

Stressor	Management Objective	Action(s)	Implementing Parties	Schedule/Notes
Low flows during dry season	Maintain suitable conditions for juvenile rearing, and smolt migration to Napa River estuary	2.1. Establish guidelines to maintain in-stream flow to protect salmonids	State Water Board (Division of Water Rights)	By January 1, 2008
		2.2. Adopt Local, state, and federal agencies to participate in a cooperative partnership to develop a plan for joint resolution of water supply reliability and fisheries conservation concerns	Local municipalities working with Water Board, State Water Board (Division of Water Rights), National Oceanic and Atmospheric Administration Fisheries Service (NOAA), and California Department Fish and Game (DFG)	<u>Adopt plan</u> by fall 2010.
		2.3. Adopt reservoir bypass flows as needed to protect salmonids downstream of municipal water supply reservoirs	State Water Board (Division of Water Rights)	Conduct in-stream flow analysis; schedule based on consultation with NOAA, DFG, and Water Board
		2.4. 2.3. Install and maintain dial-up water-level gage programs and implement public education program in 10 key tributaries for steelhead	<u>Local public agencies</u>	Accomplished by Spring of 2010
		2.5. 2.4. Develop water-level guidelines to support juvenile salmonid rearing and migration	Local public agencies	<u>Adopt g</u> Guidelines adopted by spring of 2010
		2.6. 2.5. Conduct water rights compliance survey to protect fish and water rights	County of Napa State Water Board (Division of Water Rights)	Schedule per consultation with NOAA, DFG, and Water Board

Comment 2.3/3.3: “The...proposal to increase flow could also have negative environmental impacts that the Board has not even considered. For example, the City would have to rely on more imported water, which could lead to or further exacerbate existing groundwater overdraft conditions or otherwise negatively impact the environment.”

We expect the cooperative partnership encouraged in Table 5.2 to lead to development of a plan for joint resolution of water supply reliability and fisheries conservation concerns. Any potential solutions identified could involve development of additional water supply; however, it is unknown at this time what the solution would be, and, as such, environmental effects are speculative.

We postulate that potential future increases in releases from municipal water supply reservoir, if they occur, would be balanced by equal or greater increases in surface water supply. Therefore we do not concur that it is likely that additional reservoir releases would necessarily lead to additional groundwater overdraft. Please also see our expanded discussion of these issues in the revised Staff Report and our revisions to Section 6.6.1 of the Staff Report, cited in the previous comment.

Comment 2.4/3.4: “The General Plan, and the associated water supply plans, for [the cities] have been developed...based on the current diversion and bypass requirements. If these plans were undermined through a loss of water rights, the entire community would be negatively impacted because the [cities’] ability to provide economic development and affordable housing would be significantly compromised. Moreover, as the [cities] would have to develop new sources of drinking water, it would have to raise water rates dramatically, which would have the greatest impact on its poorest customers.”

Staff are convinced that the multi-agency collaboration we propose will likely lead to increased water availability both for residents of Napa and Calistoga and for wildlife. We see no basis at this time for predicting that restoring the fishery will inevitably lead to the demise of economic development programs in Napa County or even to the cities’ need to develop new water supplies.

Comment 2.5/3.5: “As the Regional Board does not have the authority to change existing water rights, existing water rights cannot be modified to accommodate higher flows without the State Water Board undertaking a large and contentious water rights proceeding.”

We disagree that a large and contentious water rights proceeding is the only means by which reservoir bypass flows and/or releases might be increased. For example, increased

flows downstream of dams could be accomplished voluntarily under existing water rights agreements. The cooperative partnership we propose is intended to jointly resolve water supply reliability and fisheries conservation concerns and avoid reactive and contentious disputes. We note that the National Marine Fisheries Service, in its comment letter (no. 12, below), expresses that agency's willingness to participate in the collaborative partnerships we propose, as well as in other projects related to the implementation plan in the Basin Plan amendment.

Comment 2.6/3.6: "EPA has agreed to allow communities to take voluntary actions to improve the habitat in the tributaries to the Napa River before it considers prescriptive actions are taken....The Regional Board should give those in the watershed the opportunity to take voluntary actions...before it considers prescriptive actions like requesting that the State Board conduct water rights proceedings."

Water Board staff are aware of no such EPA agreement or policy. In any case, please review our response to comment 2.2/3.2 above.

Comment 2.7/3.7: The cities comment that "The Regional Board's proposal to increase flow would also have negative environmental impacts that the Board has not even considered...[including] undesirable land use changes or undesirable changes in farming practices the could negatively impact the environment as a result." The City of Napa predicts a "buildup of salts in the soil if there is an insufficient supply for irrigation."

Please see our response to comment 2.2/3.2, where we clarify proposed actions to protect or enhance baseflow. Although we recommend formation of a cooperative partnership between local, state, and federal government to explore resolution of water supply reliability and fisheries conservation concerns, we do not require or compel parties to participate.

The environmental analysis has also been expanded in the revised Staff Report (Chapter 7) to consider the potential environmental impacts of the priority projects we have identified, and includes findings that the potential impacts to groundwater and agricultural resources are less than significant.

Comment 2.8/3.8: Sometimes more water has little or no benefit because there is insufficient habitat to support a larger population...On the Napa River...there has already been an increase in flows resulting from increased reservoir releases, therefore the extent that any further significant benefits can be achieved through additional flows...is unclear."

Our proposed TMDL and habitat plan aims to address all factors limiting sustainable salmon and steelhead populations. We recognize that increased flows alone are not sufficient and therefore promote this heuristic approach. Note that removal of migration barriers, which is identified in Table 5.3 in the Basin Plan amendment, is one way to increase available habitat.

Comment letter no. 4: Clean South Bay

Comment 4.1: “It is as pleasure to write in support of the proposed Basin Plan Amendment – Napa River Sediment Reduction and Habitat Enhancement Plan. The multiple elements of the implementation plan that not only address sediment relate threats to steelhead and salmon but also include steps to resolve barriers to habitat access, physical habitat complexity, water temperature, and instream flows are all essential to protecting salmonid productivity and survival in the Napa River and key tributaries.”

We appreciate Clean South Bay’s support for our comprehensive approach.

Comment 4.2: “Since the Plan has an extended implementation timetable, we strongly encourage you to work with the Napa River watershed community to establish priorities for early actions that will accelerate habitat restoration.”

It is gratifying to note that a number of early actions are already underway including the first phase of implementation of river restoration action over 1.0 mile of the 4.6 mile Rutherford Reach. Also, the Water Board and NOAA Fisheries have already certified approximately 7,000 acres of vineyards in the Napa River watershed as protective of water quality and salmonids. We expect this figure to be doubled within the next two years. Construction of the fish passage restoration project at Upper York Dam is expected to begin in the summer of 2007. A grant was recently awarded to the Napa County RCD to implement road erosion control and prevention measures on dirt roads in the Carneros Creek and Sulphur Creek tributary watersheds that would reduce future sediment delivery to channels by approximately 21,000 cubic yards, and serve as a demonstration project to jump start similar efforts elsewhere in the Napa River watershed. We are also excited about planning and design efforts that are funded and underway to explore river restoration options over the 10 mile-long Oakville-to-Oak Knoll Avenue Reach of the mainstem of the Napa River, and to enhance fish passage in the mainstem of the Napa River at the Zinfandel Lane Bridge. Finally, the Department of Water Resources has recently awarded a grant to the Napa County RCD to install and maintain water-level gages and conduct a public education program in four Napa River tributaries, and to develop voluntary guidelines for water-levels to support juvenile salmonid rearing and migration.

Comment letter no. 5: County of Napa

We are pleased to respond to the County's extensive comments. Numbering in this section corresponds with the County's numbering in their letter.

Comment 5.1: "The County...requests that the Water Board either update its WDRs whenever the County amends [its] conservation regulations, or alternatively, that references to Chapter 18.108 of the Napa County Code include the following language, "as amended from time to time by the County."

We appreciate this comment, but we cannot prospectively incorporate future regulations by non-state agencies into a Basin Plan amendment. Please also note that waivers of waste discharge requirements, which are conditional and may be terminated at any time, may not exceed five years in duration. After five years, the Water Board may renew, revise, and/or rescind these programs.

Comment 5.2: "The Napa Green Certification Program is likely to evolve over time in an adaptive management process. The proposed Basin Plan amendment and associated WDRs should reflect such potential changes."

When conditional waivers of waste discharge requirements are adopted for vineyards, the Water Board may consider including specific language to address this issue.

Over the past two years, the Water Board has certified over 7,000 acres of vineyards that have been found to be operated in ways that are protective of water quality and habitat conditions for salmon and steelhead in the Napa River watershed. Although we agree the program is likely to evolve over time, we have no reason to expect it to become less protective of water quality and/or habitat conditions. Also, our agency provides a significant portion of the funding that has been used to implement the program, an arrangement that provides us with opportunities to weigh in on any adaptive updates. For all of these reasons, we do not agree that this issue needs to be addressed in the proposed Basin Plan amendment.

Comment 5.3: "Please clarify how the RWQCB's Stream and Wetland Protection Policy and the State Water Resources Control Board's In-stream Flow Policy (AB2121), under development,...interact with the implementation measures outlined in the proposed amendment....These policies should be developed in a manner to help clarify the proposed Implementation Measures and guide the development of the required WDRs."

The proposed Basin Plan amendment, the Napa River Sediment TMDL and Habitat Enhancement Plan, recognizes a holistic suite of implementation actions to protect and/or enhance stream-riparian habitat conditions and associated water quality in the Napa River watershed. These are some of the same goals we expect will be recognized as part of the regional Stream and Wetland Protection Policy now under development by the same Water Board staff who are engaged with the Napa River watershed project. We do not expect any conflicts between these two efforts.

Our staff are also participating in regular coordination meetings informing development of the North Coast Instream Flow Policy. In our agency's comments on the Instream Flow Policy project scope, we discuss the need for coordination between TMDL implementation and water rights policies. Adoption of the proposed Basin Plan amendment under discussion here would not result in new water rights regulations. The proposed amendment recognizes existing authorities of the State Water Board, the North Coast Instream Flow Policy when adopted, and other cooperative efforts to protect and/or enhance instream flow. Finally, we note our participation in the Napa County General Plan Revision process, and our interest in working with the County to develop effective and efficient regulations to protect the environment.

Comment 5.4: The County commented that items in the Environmental Checklist warrant "further additional environmental analysis and possibly an Environmental Impact Report in order to be legally adequate."

Under CEQA, the Water Board's basin planning program is a "certified regulatory program" exempt from the requirement to file environmental impact reports. We are, however, required to prepare "substitute" environmental documentation. The proposed Basin Plan amendment package, including the Staff Report and its environmental checklist and analysis, serve as the substitute documentation.

The analysis considers the reasonably foreseeable compliance projects in general programmatic terms, as it is unknown what specific projects will be proposed by persons subject to the Basin Plan amendment. The Water Board has disclosed and analyzed what it reasonably can foresee, and has not speculated on what is currently unknown. When specific projects are proposed, they will need to undergo project-specific analysis under CEQA, to the extent that they are projects under CEQA. At this point, the degree of specificity in the Water Board's substitute environmental document is commensurate with the underlying project described in that document.

Comment 5.4a: The County suggests that “release of reservoir water (public or private) to the river during the dry season...is contradictory to the environmental impact conclusions” of “no impact to groundwater supply or recharge and less than significant impacts to drainage patterns of the Napa River.” The County states that “increasing flows in the Napa River would have negative environmental impacts to groundwater, as municipalities would rely on more imported groundwater, intensifying existing over draft conditions and river drainage and discharge pattern[s] will be significantly affected.”

Please see our responses to comments 2.2/3.2 and 2.3/3.3 above.

Comment 5.4b: Regarding actions recommended in the habitat enhancement plan to restore river banks and channel movement, the County challenges the “less than significant impact to agricultural resources,” determination (Environmental Checklist II a, Staff Report Chapter 7), and states that “conversion of prime farmland to a non-agricultural use is a potentially significant environmental impact that has not been fully considered nor analyzed by the RWQCB.”

The required query under the Environmental Checklist is whether the project would “convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance [collectively, Farmlands], as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?” The habitat enhancement plan recommendations involving activities such as river bank and channel restoration would not result in a conversion of the above-defined Farmlands—the agricultural use and character of the Farmlands near the restoration activities would remain intact. Thus, there will be no significant impact.

Comment 5.4c: “It is incorrect for the RWQCB to assume ‘no impact’...in regard to conflict with applicable policies or regulations of any agency with jurisdiction in the project area (i.e., Napa River Basin).” Specifically, the County mentions the Water Board’s Stream and Wetland Protection Policy, the State Water Board’s In-stream Flow Policy (AB2121), and the Napa County General Plan Update process.

With regard to consistency between the proposed Basin Plan amendment, the Stream and Wetland Protection Policy, and the Northcoast Instream Flow Policy, please see our response to Comment 5.3 above. We also have every intention of working cooperatively with the County in the General Plan Update process, to identify and promote actions that will help restore water quality, and protect the salmon and steelhead fisheries in the Napa River. We foresee collaboration, not conflict, in this effort, and therefore no need to discuss or analyze potential conflict.

Comment 5.4d: The County suggests that under the California Environmental Quality Act (CEQA), “a programmatic environmental impact report (PEIR) is warranted to support the environmental findings offered.” The comment continues, “Without a PEIR to support the proposed amendment and implementation plan, ‘entities required to undertake projects to satisfy requirements derived from the Basin Plan’ would be subject to review under CEQA on a project-by-project basis.”

Please see our response to Comment 5.4 above.

Comment 5.5: The County asks that definitions be included in the Basin Plan for “Vineyard owner and/or operator,” “Ranch owner and/or lessee,” and “Landowner and/or Designated Manager,” as well as “explicit descriptions of the types of land that fall under these categories and the minimum sizes to qualify for regulation.” Further, the County states that “it is unclear whether dischargers could be subject to more than one set of requirements.”

In order to allay any possible confusion, we have deleted the term “designated manager” from Table 4.3 and Table 4.4 of the Basin Plan amendment, shown at the conclusion of this response.

Please see our response to the Department of Fish and Game’s comment no. 1.2.6 for a detailed discussion of land uses and parcel sizes we propose to regulate.

Landowners who conduct multiple types of land use will be subject to multiple requirements or performance standards. For example, if a parcel supports roads, vineyards, and grazing uses, performance standards for vineyard surface erosion, rangeland surface erosion, and road-related sediment delivery to channels would all need to be included in an erosion control plan for these sources. The performance standards are specific to defined sediment source categories that in some cases occur in all of the land types listed in Tables 4.1-4.4. For example, roads and/or unstable areas may occur in all of the land types listed in these tables. Other source categories, in contrast, are land use-specific (vineyard surface erosion, and rangeland surface erosion).

Table 4.3 Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Rural Lands^{1, 4}

Land Use Category	Sources and Performance Standards	Actions	Implementing Parties	Completion Dates
Rural Lands	Roads: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period ² ; and Gullies and/or shallow landslides: Accelerate natural recovery, and minimize human caused increases in sediment delivery from unstable areas.	Submit a Report of Waste Discharge ³ to the Water Board that provides, at a minimum, the following: description of the property; identification of site-specific erosion control measures to achieve performance standard(s) specified in this table; and a schedule for implementation of identified management <u>erosion control</u> measures.	Landowners and/or designated managers	October 2012
		Comply with applicable Waste Discharge Requirements (WDRs) or waiver of WDRs.	Landowners and/or designated managers	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of measures to reduce fine sediment discharge, and enhance stream habitat conditions <u>site specific erosion control measures</u> . ⁵	Landowners and/or designated managers	As specified in applicable WDRs or waiver of WDRs
¹ Does not apply to parcels upstream of municipal reservoirs, where measures required per Napa County Code (Chapter 18.108), are sufficient to achieve sediment load allocations, and/or parcels classified by Napa County as “rural residential” (2% of unincorporated area in Napa County), where Water Board will rely on education and outreach and participation in voluntary programs. ² To achieve 50% reduction in road-related erosion, which we estimate averaged 500 yd ³ per mile between 1994 and 2004. ³ Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board ⁴ Rural lands, per Napa County definition include: non-farmed and non-grazing portions of parcels >10-ac that contain one or more residences, and/or a winery; vacant residential parcels >10-acres; and/or portions of 10-acre or larger parcels with secondary vineyard, orchard, and/or grazing ⁵ These reports may be prepared individually or jointly or through a recognized third party.				

Table 4.4 Required and Trackable TMDL Implementation Measures for Sediment Discharges associated with Parks and Open Space, and/or Municipal Public Works¹

Landowner Type	Sources and Performance Standards	Actions	Implementing Parties	Completion Dates
Parks and Open Space and Public Works	Roads: Road-related sediment delivery to channels $\leq$ 500 cubic yards per mile per 20-year period ² ; and Gullies and/or shallow landslides: Accelerate natural recovery, and minimize human caused increases in sediment delivery from unstable areas.	Submit a Report of Waste Discharge ³ to Water Board that provides, at a minimum, the following: description of the property; identification of site-specific erosion control measures to achieve performance standard(s) specified in this table; and a schedule for implementation of identified management <u>erosion control</u> measures.	Napa County Municipal Stormwater <u>Management</u> Program State of California, Department of Parks and Recreation State of California, Department of Transportation	October 2012
		Adopt and implement best management practices for maintenance of roads to reduce road-related erosion and protect stream-riparian habitat conditions.		
		Comply with applicable Waste Discharge Requirements (WDRs) or waiver of WDRs.	Landowners and/or designated managers	As specified in applicable WDRs or waiver of WDRs, and/or the SWMP
		Report progress on implementation of measures to reduce fine sediment discharge, and enhance stream habitat conditions <u>site specific erosion control measures</u> . ⁴	Landowners and/or designated managers	As specified in applicable WDRs or waiver of WDRs, and/or SWMP
¹ Does not apply to parcels upstream of municipal reservoirs, where measures required per Napa County Code (Chapter 18.108), are sufficient to achieve sediment load allocations, and/or parcels classified by Napa County as "rural residential" (2% of unincorporated area in Napa County), where Water Board will rely on education and outreach and participation in voluntary programs. ² To achieve 50% reduction in road-related erosion, which we estimate averaged 500 yd ³ per mile between 1994 and 2004. ³ Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board. ⁴ These reports may be prepared individually or jointly or through a recognized third party.				

Comment 5.6: “The Proposed Amendment does not clarify whether the Water Board intends to set forth specific implementation measures for the dischargers identified in Tables 4.1–4.4 when it develops general WDRs by 2010, or whether it intends to delegate the development of specific measures to dischargers via their Reports of Waste Discharge due in 2012.”

The short answer to this comment is “Both.” We intend to develop conditional waivers of waste discharge requirements (WDRs) for discharges, from the land types listed in Tables 4.1-4.4, before the fall of 2010, and ideally by the fall of 2009.

After adoption of the WDRs waiver requirements by the Water Board, each sediment discharger or group of dischargers will need to prepare an erosion control plan which will be submitted as part of their report of Waste Discharge by 2012. Please see our response to Comment 1.2.10 for further discussion of our anticipated WDRs waiver policy.

Comment 5.7: The County requests clarification of the performance standards listed in the proposed Basin Plan amendment (Table 4.1). “‘Accelerate natural recovery’ and ‘minimize human-caused increases in sediment delivery from unstable areas’...are actions, rather than specific, achievable standards...[and] are not explained or defined in the proposed amendment....The proposed amendment should be revised to express these actions as objective performance standards, and to define clearly the types of implementing actions that will be required.”

Narrative performance standards in Table 4.1 will be evaluated on a site-specific basis. The numeric performance standard is the TMDL allocation.

Comment 5.8: The County asks that definitions be included in the Basin Plan for “identified management measures,” “site specific erosion control measures,” and “measures to reduce fine sediment discharge, and enhance stream habitat conditions.” It also requests that where such phrases have the same meaning, the Water Board “should choose one phrase and use that consistently.”

In response to this comment, we have standardized our use of terms in Tables 4.1–4.4. Revised Tables 4.3 and 4.4 are reproduced in the response to comment 5.5, above. Tables 4.1 and 4.2 are shown below.

The scope of actions described for the land types as indicated in Tables 4.1-4.4 relates solely to implementation of erosion control measures for sediment delivery sites and unstable areas, and related actions (e.g., reporting and monitoring).

The revised text, including the phrase **identification of site-specific erosion control measures**, is intended to emphasize that if erosion control measures are to be effective, those measures must be based on site-specific understanding of the causes for erosion and sediment delivery.

TABLE 4.1 Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Vineyards¹

Land Use Category	Sources and Performance Standards	Actions	Implementing Parties	Completion Dates
Vineyards	Surface Erosion associated with vineyards: Comply with conservation regulations (County Code, Chapter 18.108); and Roads: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period ² ; and Gullies and/or shallow landslides: Accelerate natural recovery and minimize human-caused increases in sediment delivery from unstable areas; or Implement farm plan certified under Napa Green Certification Program	Submit a Report of Waste Discharge ³ (RoWD) to the Water Board that provides, at a minimum, the following: a description of the vineyard; identification of site-specific erosion control measures needed to achieve performance standard(s) specified in this table; and a schedule for implementation of identified management erosion control measures as needed to achieve performance milestones listed below in Table 6.	Vineyard owner and/or operator	October 2012
		Comply with applicable waste discharge requirements (WDRs) or waiver of WDRs.	Vineyard owner and/or operator	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of measures to reduce fine sediment discharge, and enhance stream habitat conditions <u>site specific erosion control measures</u> . ⁴	Vineyard owner and/or operator	As specified in applicable WDRs or waiver of WDRs

¹ Does not apply to parcels upstream of municipal reservoirs, where measures required per Napa County Code (Chapter 18.108), are sufficient to achieve sediment load allocations, and/or parcels classified by Napa County as "rural residential" (2% of unincorporated area in Napa County), where Water Board will rely on education and outreach and participation in voluntary programs.

² To achieve 50% reduction in road-related erosion, which we estimate averaged 500 yd³ per mile between 1994 and 2004.

³ Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board.

⁴ Reports may be submitted individually or jointly through a recognized third party.

Table 4.2 Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Grazing¹

Land Use Category	Source(s) and Performance Standard(s)	Actions	Implementing Parties	Completion Dates
Grazing	Surface erosion associated with livestock grazing: Attain or exceed minimal residual dry matter values consistent with University of California Division of Agriculture and Natural Resources guidelines and Roads: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period ² and Gullies and/or shallow landslides: Accelerate natural recovery and minimize human-caused increases in sediment delivery from unstable areas	Submit a Report of Waste Discharge ³ to the Water Board that provides, at a minimum, the following: description of the ranch property ; identification of site-specific erosion control measures to achieve performance standard(s) specified in this table; and a schedule for implementation of identified management <u>erosion control</u> measures.	<u>Ranch Landowner and/or lessee ranch operator</u>	October 2012
		Comply with applicable waste discharge requirements (WDRs) or waiver of WDRs.	<u>Ranch Landowner and/or lessee ranch operator</u>	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of measures to reduce fine sediment discharge, and enhance stream habitat conditions <u>site specific erosion control measures</u> . ⁴	<u>Ranch Landowner and/or lessee ranch operator</u>	As specified in applicable WDRs or waiver of WDRs
¹ Does not apply to parcels upstream of municipal reservoirs, where measures required per Napa County Code (Chapter 18.108), are sufficient to achieve sediment load allocations, and/or parcels classified by Napa County as “rural residential” (2% of unincorporated area in Napa County), where Water Board will rely on education and outreach and participation in voluntary programs. ² To achieve 50% reduction in road-related erosion, which we estimate averaged 500 yd ³ per mile between 1994 and 2004. ³ Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board. ⁴ These reports may be prepared individually or jointly or through a recognized third party.				

Comment 5.9: In Table 6 in the proposed Basin Plan amendment, the County finds it “unclear which performance milestones...apply to the Water Board, and which to vineyards or other dischargers.” The County notes that “the deadline for meeting the first set of performance milestones is 2010, but vineyards’ ROWDs are not due until 2012.” “Tables 4.2, 4.3, and 4.4 require implementing parties to include a schedule for implementation of ‘identified management measures,’ but do not cross-reference to Table 6.”

To avoid confusion, and based on further reflection regarding the challenges of attempting to define performance milestones for various sediment reduction and habitat enhancement actions, we have revised the proposed Basin Plan amendment to remove Table 6 and the references to it in the Regulatory Tools and Evaluation and Monitoring sections of the Basin Plan amendment. We note however that responsible parties identified in Tables 4.1-4.4, as part of their submittal to the Water Board in order to gage incremental progress over time, will be required to include a schedule that includes interim milestones for reduction of sediment discharges, and a monitoring plan to document implementation and effectiveness of management practices (see response above to comment 5.6).

Should the proposed approach prove ineffective in achieving significant incremental progress toward achievement of water quality standards, the Water Board retains the discretion to revise the implementation plan to place a greater emphasis on the use of its regulatory authorities (e.g., revising or rescinding the conditional waiver program, adopting a water quality objective for baseflow, etc.). Changes to the Basin Plan amendment to delete Table 6 and references to it are as follows:

Individual landowners or coalitions may work with “third parties” to develop and implement sediment pollutant control programs. With regard to achievement of actions to protect or enhance baseflow, fish passage, habitat complexity, and stream temperature, as specified in Tables 5.1 through 5.4 the Water Board will initially rely on cooperative programs. Reliance on this approach is dependent on regular and substantive progress in achieving the performance milestones for ~~sediment reduction and habitat enhancement specified in Table 6~~. Alternatively, the Water Board has the discretion to use WDRs and/or waste discharge prohibitions (for sediment) as primary regulatory tools for control of sediment discharges. Similarly, the Water Board may consider adopting specific water quality objectives for flow or other habitat attributes, or using alternative authorities to achieve habitat, fish passage, temperature, and flow enhancement objectives.

TABLE 6. PERFORMANCE MILESTONES AND DECISION POINTS

Milestones	Date
Water Board Decisions: adopt waste discharge requirements or waiver(s) of waste discharge requirements, as applicable, for source categories presented in Tables 4.1 through 4.4.	Fall 2010
Performance Milestones • Performance standards for protection of ecologically important large woody debris implemented as part of Countywide Stormwater Program. • Grazing surface erosion management practices implemented at all commercial livestock ranches • Baseflow monitoring program and guidelines implemented • Tributary fish passage surveys completed • Water supply reliability and fisheries conservation plan adopted by municipalities • Zinfandel Lane fish passage project implemented	Fall 2010
Water Board Decisions: renew/revise/rescind waiver(s); adaptive update TMDL and Implementation Plan.	Fall 2013
Performance Milestones • 25% reduction in sediment delivery from roads • 15% reduction in sediment delivery from land use related gullies and slides • Rutherford (or similar) channel enhancement project fully implemented	Fall 2015
Water Board Decisions: renew/revise/rescind waiver(s); adaptive update of TMDL and Implementation Plan.	Fall 2016 & Fall 2019
Performance Milestones • 50% reduction in sediment delivery from roads • 30% reduction in sediment delivery from land use related gullies and slides • All hillside vineyards have approved/implemented erosion control plans per Napa County Conservation Regulations	Fall 2020
Water Board Decisions: renew/revise/rescind waiver(s); adaptive update of Plan.	Fall 2022
Performance Milestones • 50% reduction in sediment delivery from land use related gullies and slides	Fall 2025

Notes: Milestones and/or decision points may be revised per adaptive updates to this plan.

Regulatory Tools

Individual landowners or coalitions may work with “third parties” to develop and implement sediment pollutant control programs. With regard to achievement of actions to protect or enhance baseflow, fish passage, habitat complexity, and stream temperature, as specified in Tables 5.1 through 5.4, the Water Board will initially rely on cooperative programs. Reliance on this approach is dependent on regular and substantive progress in achieving the performance milestones for sediment reduction and habitat enhancement specified in Table 6. Alternatively, the Water Board has the discretion to use WDRs and/or waste discharge prohibitions (for sediment) as primary regulatory tools for control of

sediment discharges. Similarly, the Water Board may consider adopting specific water quality objectives for flow or other habitat attributes, or using alternative authorities to achieve habitat, fish passage, temperature, and flow enhancement objectives.

Evaluation and Monitoring

Three types of monitoring are specified to assess progress toward achievement of numeric targets and load allocations for sediment:

- 1) Implementation monitoring to document that required sediment control and habitat enhancement actions are implemented
- 2) Upslope effectiveness monitoring to evaluate effectiveness of sediment control actions in reducing rates of sediment delivery to channels
- 3) In-channel effectiveness monitoring (e.g., spawning gravel permeability and redd scour) to evaluate channel response to management actions and natural processes

Implementation monitoring will be conducted by landowners or designated agents. The purpose of this type of monitoring is to document that sediment control and/or habitat enhancement actions specified herein actually occur.

The Water Board will conduct upslope effectiveness monitoring to evaluate sediment delivery to channels from land use activities and natural processes. ~~which will involve regular updates of the sediment source analysis (e.g., estimation of rates of sediment delivery to channels), at a frequency that tracks with the projected schedule for evaluation of the performance milestones listed in Table 6.~~ The first update will occur on or before the fall of 2017, when sediment delivery associated with land use activities should be reduced by 25 percent or more. A subsequent update may occur, assuming the numeric targets for sediment are not already achieved, on or before the fall of 2022, when sediment supply associated with land use activities should be reduced by 37 percent or more.

Comment 5.10: “The proposed amendment does not define ‘a recognized third party.’ (See Tables 4.1–4.4)

We use “third party” as the term is described in the state’s *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (SWRCB, 2004).

An NPS pollution control implementation program is a program developed to comply with SWRCB or RWQCB WDRs, waivers of WDRs, or basin plan prohibitions. Implementation programs for NPS pollution control may be developed by a RWQCB, the

SWRCB, an individual discharger or by or for a coalition of dischargers in cooperation with a third-party representative, organization, or government agency. The latter programs are collectively known as “third-party” programs and the third-party role is restricted to entities that are not actual dischargers under RWQCB/SWRCB permitting and enforcement jurisdiction. These may include NGOs, citizen groups, industry groups, including discharger groups, watershed coalitions, government agencies, or any mix of the above. Although a third-party program may be comprised solely of dischargers, the reason it is a third-party program is because the entity that represents the dischargers is not an actual discharger.

The Napa County Resource Conservation District, the Napa Field Office of the USDA Natural Resources Conservation Service, the California Land Stewardship Institute, and the University of California Cooperative Extension are examples of the types of agencies that have been recognized elsewhere in the state as third parties. The county Agricultural Commissioner also has taken on this role in some circumstances.

Comment 5.11: “The Staff Report estimates the cost of the TMDL’s road-related erosion control measures on page 116, Table 12....These broad estimates make it very difficult for dischargers to understand their potential costs. Moreover, the county would appreciate greater detail on how the Water Board developed these cost estimates, and greater specificity as to the costs to categories of dischargers.”

Table 12 in the Staff Report provides all of the assumptions and references used to estimate the costs of controlling road-related sediment delivery to channels, as needed to achieve the proposed performance standards for roads. Staff’s basis for unit cost estimates of \$20 per cubic yard of sediment prevented from future delivery to a channel (from dirt roads), and \$72 per cubic yard of sediment prevented from future delivery to a channel (from paved public roads), are derived from detailed cost estimates developed by Pacific Watershed Associates (PWA) for 22 miles of public roads and 43 miles of private dirt roads that were surveyed in the watersheds of Carneros, Dry, and Sulphur creeks (Napa RCD 2003a, 2003b, 2003c). Similarly, the assumption that future sediment delivery from roads (whether paved or dirt), without recommended treatment to storm-proof the roads, will average approximately 1000 cubic yards over the next 20 years is derived directly from the average values developed by PWA from their surveys.

The estimated unit costs for control and/or prevention of road-related sediment delivery and average estimated costs for future rates of road-related sediment delivery (without treatment) may be used by individual landowners to provide initial cost estimates, which should be within a factor of two of actual potential cost. Unit costs for prevention of road-related sediment delivery to channels from paved private roads may be somewhat lower than for public roads because private roads do not need to conform to as many design standards, and construction activity does not have the same requirements for traffic control. We would expect estimated unit costs and erosion rates to be similar across the land types listed in Tables 4.1 to 4.4.

Finally, we emphasize that for most paved and/or dirt roads located on flat lying or gently sloping terrain (e.g., valley floor roads) current rates of road-related sediment delivery to channels are likely much lower than our proposed performance standard. Similarly, well maintained upland (hillside) roads are likely to be in compliance with the proposed performance standard already. In such cases, results of the baseline inventory will provide a basis for demonstrating attainment of performance standards for roads.

Comment 5.12: Referencing Table 15, Staff Report, the County asks that costs of stabilizing “gullies and/or shallow landslides” be broken down among “vineyard owners, ranchers, other rural private property owners, and public agencies.” It requests “clarification of the derivation of [the figures in Table 15] and an effort on the part of the Water Board to develop WDRs in consideration of the County’s limited resources.”

The average estimated cost by land type is roughly proportional to fraction of total hillside land area delineated in each of these categories.

All of the assumptions and references used to derive the unit cost values are provided in the notes to Table 15, Cost Estimates for Erosion Control and Prevention in Unstable areas; and the text of the Staff Report Section 7.4, Economic Considerations. Considering the watershed-wide goal of reducing sediment delivery from this source by 800,000 metric tons over a 20-year period (from hillside sites which comprise approximately 2/3 of the total watershed area), this equates to an average reduction of approximately 54 metric tons per square kilometer per year, or approximately 6 cubic yards per acre per year of sediment reduction from unstable areas. Using these figures, and range for potential sediment control costs, \$5-to-20 cubic yard of sediment prevented from entering a channel, leads to an estimate of \$30-to-120 per acre per year to achieve the proposed performance standard, at sites where gully and/or shallow

landslide erosion is active and influenced by current and/or historical land use management practices.

Comment 5.13a: Referencing Table 4.4 in the proposed Basin Plan amendment, the County states that it is “unclear how the County will provide site-specific erosion control measures for over 125 miles of public roads identified in the watershed. ...It is difficult to understand the economic impact of this requirement.”

Water Board staff will work closely with the County to develop a schedule that anticipates funding over a number of future budget years. We recognize that the County has fiscal concerns; however the cost of conducting surveys of rural roads for purposes of prioritization are quite low. In fact the maximum actual cost to the County should be less than the maximum estimate of the total cost for all paved public roads (\$6.1 million), since costs associated with state highway roads are the responsibility of Caltrans. We further note that site-specific erosion control measures have already been developed and inventoried for 22 miles of County roads, almost 20 percent of the 125 miles of roads in the watershed located downstream of municipal water supply reservoirs.

Comment 5.13b: Due to the fact that recent, costly storm damage in the watershed has been caused by landslides in areas of saturated soils, the County notes that “to suggest that future maintenance and storm damage costs will be significantly less due to the recommended actions outlined in proposed implementation measures is inaccurate.”

Our opinion is based on published results of site-specific road erosion control and prevention inventories as described in the Staff Report (PWA 2003a, 2003b, and 2003c), and the results of studies conducted elsewhere in northern California and the Pacific Northwest (Reid and Dunne, 1984; Hagans and Weaver, 1987). “Storm-proofed” roads are much less susceptible to shallow landslide erosion, surface erosion, and gully erosion than roads with poor drainage and/or improperly designed and maintained crossings. For roads that are built on unstable areas, where it is possible to relocate the road segment, relocation is typically less expensive over the long-term than reconstruction.

Comment 5.13c: “The County is concerned about RWQCB assertions that future grants will be a viable source of funding for [erosion control measures in Table 4.4, Basin Plan amendment] and other road-related projects recommended in the proposed Basin Plan amendment.”

While Water Board staff support use of grant funding to pay for necessary road erosion control actions we agree that this source is not secure. However, all of the funding for the road erosion control and prevention inventories conducted in the watersheds of Carneros, Dry, and Sulphur creeks has been provided through grants from the California Department of Water Resources, and/or the California Department of Fish and Game. The Water Board also recently awarded a \$344,000 grant to the Napa County RCD for a pilot program to reduce sediment delivery from roads in the Carneros and Sulphur Creek watersheds. We look forward to working with the County and other interested parties to provide assistance in obtaining additional grant funding in the future.

Comment 5.14: The County takes issue with Board staff's use of the County's definitions of "Rural Lands" without reference to the definition in the County Code; and also to our use of the County's "Rural Residential" land use designation. "The County is concerned that this classification may be either overly broad or overly narrow, and does not focus on lands that are properly the subject of the TMDL (i.e. significant sources of sediment.)....The Water Board should adopt terminology specifically developed for the Basin Plan to ensure that the regulations apply only to lands that are significant sources of sediment."

Consistent with the state's Nonpoint Source Policy, rural lands—by the County's own definition—are considered to be significant, actual, or potential sources of sediment to the watershed because they include extensive networks of unpaved roads. Therefore entities responsible for these lands are considered actual or potential dischargers. Please see our response above to comment 1.2.6.

Comment 5.15: The County notes that the name of the countywide stormwater program should be listed in Table 4.4 as the "Napa County Stormwater Management Program."

We are glad to make this correction. Table 4.4 of the proposed Basin Plan amendment has been edited to reflect this change, as has Table 5.3. The revised Table 4.4 is in the response to comment 5.5 above. Revised Table 5.1 is in the response to comment 5.16.

Comment 5.16: "Table 5.3 (Basin Plan amendment) identifies Action 3.3, Recommending the identification and remedy of all significant structural impediments to fish passage in the Napa River and ten key tributaries. No financial impacts were identified in the Staff Report for this recommendation....Again, the

County is concerned about RWQCB's assertions...suggesting grants will be a viable source of funding for these types of projects."

We have revised action 3.3 in Table 5.3 to read "identify and develop a plan to remedy...tributaries (including York)." Tables 5.1 through 5.4 are now titled "Recommended Actions" to clarify that the Water Board is not formally requiring these actions at this time. (Revised Table 5.2 is included in the response to Comment 2.2/3.2; Tables 5.1, 5.3, and 5.4 are shown below.) Based on the fact that many of these actions are already underway as a result of cooperative partnerships between local public agencies, landowners, and state and federal agencies, we are confident that substantial and regular progress can be achieved through these voluntary efforts, and/or in the case of baseflow, through the mixture of voluntary efforts and existing authorities of the State Water Board's Division of Water Rights.

In the Basin Plan amendment, we have also revised the Regulatory Tools section references to the table titles, as follows: ..."Tables 5.1 to 5.4 (~~Implementation~~ Recommended Measures to Protect or Enhance Habitat)."

Because we are not requiring actions on the ground to remedy all barriers in key tributaries, potential costs are not estimated. Most of the fish passage projects planned or recently completed in the Napa River watershed including the Upper York Creek Dam, Heath Canyon, and Ritchie Creek projects have been funded primarily from public resources. We are optimistic that funding will continue to be available for such projects for several years into the future. As stated above, we also look forward to working cooperatively with local agencies and landowners to achieve the objectives outlined in Table 5.3.

Table 5.1 Recommended Actions to Reduce Sediment Load and Enhance Habitat Complexity in Napa River and its Tributaries

Stressor	Management Objective(s)	Actions	Implementing Parties	Completion Dates and Notes
Habitat degradation as a result of mainstem Napa River and lower reaches of its larger tributaries incising.	Reduce rates of sediment delivery (associated with incision and accelerated bank erosion) to channels, by 50 percent Enhance channel habitat as needed to support self-sustaining run of Chinook salmon and enhance the overall health of the native fish community.	1.1 Develop and implement plans to enhance stream-riparian habitat conditions, and reduce fine sediment supply in mainstem Napa River and lower tributary reaches	Landowners and/or designated agents, and reach-based stewardships	Comply with conditions of Clean Water Act Section 401 certifications (implementation of Rutherford Project completed by fall 2015, other projects by 2025)
Habitat degradation as a result of reduction in large woody debris in stream channels.	Enhance quality of rearing habitat for juvenile salmonids	1.2 Develop and implement performance standards for protection of ecologically significant large woody debris in stream channels.	Napa County Municipal Stormwater <u>Management</u> Program and State Department of Parks and Recreation	Fall 2008

Table 5.3 Recommended Actions Restore to Fish Passage

Stressor	Management Objective(s)	Action(s)	Implementing Parties	Schedule/Notes
Structures in channels that block or impede fish migration (note: flow-related barriers are addressed above)	No significant structural impediments to salmonid migration in mainstem or in 10 key tributaries for steelhead (including but not limited to the following): Dry, Milliken, Redwood, Sulphur, and York Designation of remaining tributaries will be determined in consultation with Napa County RCD, CDFG, NOAA Fisheries, and USEPA	3.1. Enhance conditions for adult and juvenile salmon and juvenile steelhead passage at Zinfandel Lane	Local public agencies and landowners	Project completed by fall of 2010
		3.2. Restore passage for adult and juvenile steelhead to-and-from York Creek upstream of Upper Dam	City of St. Helena	Schedule to be determined based on consultation with National Oceanic and Atmospheric Administration Fisheries Service (NOAA), and California Department Fish and Game (DFG)
		3.3. Identify and <u>develop a plan-to</u> remedy all significant structural impediments to salmonid migration in ten key steelhead tributaries (including York)	Local public agencies and landowners	Complete comprehensive fish passage surveys in 10 key tributaries by Fall 2010. Schedule for barrier remediation to be determined based on consultation with NOAA and DFG.

Table 5.4 Recommended Actions to Protect and/or Enhance Stream Temperature

Stressor	Management Objective(s)	Action(s)	Implementing Parties	Schedule/Notes
Stressful summer water temperatures in tributaries	Protect and/or enhance baseflow	4.1. As described earlier in Table 5.2	As described <u>indicated</u> in Table 5.2	As described in Table 5.2
	Enhance amount of ecologically significant large woody debris in channels	4.2. As described earlier in Table 5.1	As described <u>indicated</u> in Table 5.1	As described in Table 5.1
	Enhance potential shade along riparian corridors	4.3. Via Napa Green Certification Program, voluntarily establish riparian buffers, and Implement management actions to accelerate recovery of native riparian tree species	Vineyard owners and managers in partnership with Napa County Resource Conservation District and the California Land Stewardship Institute As indicated in Tables 4.1 to 4.4.	As described in Table 4.1, Trackable TMDL Implementation Measures for Sediment Discharges from Vineyards <u>Tables 4.1 to 4.4.</u>

Comment 5.17a: “During RWQCB’s presentations, it was noted there was an error in Table 5.2 (Basin Plan amendment), listing Napa County as an implementing party to conduct water rights compliance surveys.”

We have revised Table 5.2 of the proposed Basin Plan amendment to correct this error. The revised table is in the response to comment 2.2/3.2.

Comment 5.17b: “Action 2.2 (in Table 5.2), to ‘adopt a plan for joint resolution of water supply reliability and fisheries conservation concerns’ is in direct conflict with itself and should be revised....To suggest a mutual solution could solve both municipal and fishery needs without the construction of additional significant water supplies is misleading.”

We have revised the Staff Report to further specify the basis for our assertion that it is possible to enhance both municipal water supply reliability and instream flow for fish. Please see our response to comment 2.2/3.2.

Comment letter no. 6: Prof. William Dietrich, U.C. Berkeley

Comment 6.1: “The variable geology, complex landuse history, and limited field access for direction observation (due to private land) pose significant challenges to developing a TMDL. To meet this challenge, you have developed a strong conceptual framework...collected essential data to test this framework, analyzed the data to test specific hypotheses, and arrived at conclusions that seem defensible and sensible.” Professor Dietrich mentions specifically the “rapid sediment budget” approach, the methodology behind our conclusions about landuse-associated sediment supply, and the linkage we find between sediment supply and gravel permeability. He notes that “the channel incision on the mainstem Napa is significant and the recommendation that it be addressed is appropriate.”

Professor Dietrich’s appreciation of the complexity of habitat issues in the Napa River watershed is gratifying.

Comment letter no. 7: Friends of the Napa River

Comment 7.1: "...We are impressed with the depth and detail in the discussion of possible approaches to achieve allocations related to vineyards, grazing, roads, urban stormwater runoff, and channel incision. We support the proposed Habitat Enhancement Plan with its detailed recommendations regarding baseflow enhancement; additional study of juvenile steelhead growth, *coordination and collaboration between local, state, and federal government agencies*; tools to aid land managers in protecting and/or enhancing dry season baseflow; improved regulatory oversight to protect existing water rights and instream flows for fish; enhanced fish passage and enhanced habitat complexity, and stream temperature protection and/or enhancement."

We thank Friends of the Napa River for their support and their recognition of the complex and multifaceted nature of the work ahead of us.

Comment 7.2: The commenter notes the several watershed enhancement projects in the Napa Valley that are recognized in the Staff Report. "We are pleased to recognize that the TMDL plan will take into account the work on the ground to control erosion and protect or restore habitat conditions *through voluntary efforts*."

Ongoing cooperative efforts provide an excellent base for both the sediment TMDL and the Habitat Enhancement Plan. It is our hope that they will continue to be an important part of an effective program to reduce sediment supply and enhance habitat conditions in the Napa River watershed.

Comment 7.3: "We understand that the final basin plan will be developed in close coordination with stakeholders and welcome the opportunity to participate in this process."

We welcome Friends of the Napa River's participation in the adaptive implementation process to come.

Comment letter no. 8: Law Offices of Lester F. Hardy

Mr. Hardy's comments focus on issues relating to increasing baseflow in the Napa River.

Comment 8.1: "Although 'discharge of tertiary treated wastewater' shows up in Table 10 ...of the Staff Report, there is no mention of it in the narrative description of implementation measures in Section 6.6.1. ...This omission is inappropriate...."

We have retitled Table 10, "Reasonably Foreseeable Compliance Projects," in order to show that there are potential implementation actions that will be subject to environmental review at a later date. Please see the revised version in context in Chapter 7, at the end of this Responses to Comments document. Reference to discharge of tertiary treated wastewater was removed and the analysis revised to only include reasonably foreseeable compliance projects.

Please note that participation in the regional, multi-agency problem-solving effort we encourage will be voluntary. While we agree that it will be informative to present and discuss scenarios for enhancement of baseflows that could be implemented by municipalities and that would not diminish municipal water supply or cause adverse environmental impacts, the outcome of the planning process is speculative at this point. We refer the commenter to our response to comment 2.2/3.2.

Comment 8.2: "Please explain how lack of interagency cooperation might lead to diminished municipal water supplies.... Given that California Fish & Game Code Section 5937 requires all dam owners to release sufficient water 'to keep in good condition any fish that may... exist below the dam,'...please include in your explanation how lack of...cooperation could lead to degradation of the downstream habitat without placing the relevant state agencies in violation of Section 5937 [or]...the public trust doctrine."

Again, please see our response to comment 2.2/3.2, where we show our revision to Staff Report Section 6.6.1 and our deletion of the sentence to which the commenter refers..

Comment 8.3: Mr. Hardy is concerned with the ambiguity of the phrase "protecting and/or enhancing." Which is it? His questions follow: "Are existing summer flows in the main stem of the Napa River adequate for a healthy steelhead population, or do those flows require enhancement? Are existing flows in the tributaries...adequate...? What are the minimum summer flows in the Napa River and its principal tributaries necessary to support a healthy steelhead population? If the answer is presently

unknown, how does the Regional Board staff propose to find out? Has the Regional Board staff consulted with Fish & Game” on these questions?

Stillwater Sciences is preparing a study of juvenile steelhead growth, which is expected in the spring of 2007. This report will enhance our understanding of relationships between salmonid growth and baseflow in the tributaries. Please see Staff Report Section 6.6.1.

Based on staff’s review of currently available information (including published research and results of a pilot study of juvenile steelhead growth conducted in the summer of 2001, Stillwater Sciences and Dietrich 2002), we expect that, at a minimum, baseflow needs to be maintained between pools to provide adequate rates of growth and survival for juvenile steelhead during the spring and summer months in tributary reaches that support high and/or moderate densities of juvenile trout. Based on the results of the baseflow persistence survey conducted in the fall of 2001, which followed a below-normal runoff year, and the results of the pilot study described above, we conclude that in dry years, spring and summer diversions from Napa River tributaries may need to be reduced in order to provide adequate conditions for juvenile growth and survival in individual reaches and/or tributaries. However, additional information is needed to evaluate impacts of discontinuous surface water (e.g., wet pools alternating with dry riffles) on the number and fitness of juvenile steelhead that migrate to the ocean, and the influence of freshwater habitat conditions on steelhead run size.

Key to formulation of a plan to jointly resolve water supply reliability and fisheries conservation concerns will be the development of a robust quantitative model to evaluate natural and human influences on the number and fitness of juvenile steelhead that migrate from the Napa River watershed to the ocean. With such a model it should be possible to specify how much flow is needed (and where) in order to provide sufficient habitat to support a self-sustaining population of steelhead in the Napa River watershed. It is plausible that based on the results of such modeling, we may conclude that addressing other stressors (e.g., fish passage barriers, habitat complexity, etc.) may prove more effective at a tributary and/or the watershed scale.

Water Board staff consult regularly with Fish and Game and NOAA Fisheries staff regarding factors limiting the populations of steelhead and salmon in the watershed. We have incorporated their comments and suggestions in our proposed Basin Plan amendment.

Comment 8.4: “If existing flows are inadequate, where will the water to enhance those flows come from?”

This question will be answered in the collaborative, multi-agency process we propose.

Comment 8.5: “Both the Staff Report and the BASIN PLAN AMENDMENT need to be revised to make it clear that possible implementation measures include State Water Board action to (a) require increased releases from municipal and other reservoirs, as well as (b) new restrictions on diversions by riparian rights holders.”

We feel it is sufficiently clear in these documents that the State Water Board’s Division of Water Rights can conduct such future regulatory actions in the Napa River watershed. However, other than requesting that the Division of Water Rights conduct a water rights compliance survey, the proposed Basin Plan amendment does not request or require the Division of Water Rights to do anything above or beyond what it is already doing. Please also see our response to comment 2.2/3.2 where we clarify the actions that we are recommending and our intent.

Comment 8.6: “The discussion following the initial study checklist specifically characterizes the implementation plan to enhance summer flows as too speculative to be evaluated. I disagree, at least to the extent that the Staff Report takes the position that none of the actions that might be taken to increase summer flows are sufficiently foreseeable to require environmental review in connection with the BASIN PLAN AMENDMENT.”

We respectfully differ with Mr. Hardy’s opinion.

The Water Board is not mandating increased summer season flows through the proposed Basin Plan amendment. Instead, it is encouraging coordination and collaboration among local, state, and federal agencies to jointly resolve fisheries conservation and water supply reliability issues, as well as improved regulatory oversight to protect existing water rights and in-stream flows (e.g., no unlawful water diversions). At this point, it is entirely speculative what may occur as a result of the Water Board’s recommendations. CEQA does not require the Water Board to engage in speculation; all that is required is that the Water Board disclose and analyze what it reasonably can. The Water Board has met its burden.

To further clarify our intent and the nature of the actions to protect or enhance baseflow, we have revised Table 5.2 of the Basin Plan amendment and Section 6.6.1 of the staff report; the revisions are presented in the response to comment 2.2/3.2. Please see also our response to comment 5.4a.

With regard to Table 5.2, please note that actions 2.1 (establish guidelines to maintain instream flow to protect salmonids) and 2.6 (conduct water rights compliance survey) are completely within the jurisdiction of the State Water Board’s Division of Water Rights. The Division of Water Rights has prepared an environmental checklist regarding action 2.1 (e.g., the North Coast Instream Flow Policy) and a notice of

preparation of a substitute environmental document that will evaluate the potential environmental impacts. Any environmental impacts that might occur as a result of action 2.6 (conduct a water rights compliance survey) are speculative at this time. We have revised the wording of action 2.2 to clarify that the outcome of this action is to develop a plan, and that participation is voluntary. We have deleted action 2.3 to avoid the impression that we are directing the Division of Water Rights to require bypass flows from municipal water supply dams. Actions 2.4 and 2.5 are voluntary and are not expected to result in any significant environmental impacts. Resultant increases in spring and/or summer baseflow could contribute to an increase in the amount of riparian vegetation on gravel bars, flood plains, and lower channel banks in some stream reaches, as specified in the discussion that follows the checklist in Chapter 7 of the staff report.

Comment 8.7: “The Staff Report clearly contemplates the release of water into the Napa River and its tributaries to be a foreseeable consequence of the implementation plan. Discussion of the physical consequences of such releases is limited to an increase in the amount of riparian vegetation. There is no discussion of the potential for scouring of the dry riverbeds or other direct physical consequences” of poorly planned or managed releases....“The Staff Report should be amended to include a discussion of potentially significant adverse impacts...and should, if feasible, identify mitigation measures adequate to reduce such impacts to a level of insignificance.”

Please see our response to the previous comment.

Comment 8.8: Mr. Hardy finds that the Staff Report, “by logical inference and implication, contemplate[s] the possibility of new constraints on existing [municipal] surface water supplies.” “In the absence of a comprehensive scheme for water supply management which includes both surface and underground water supplies under a single, consistent scheme of regulation,” he finds “increased groundwater extraction” to be reasonably foreseeable consequences of the Habitat Enhancement Plan and thus requiring environmental analysis.

Please see our response to comment 8.6 above.

Comment 8.9: “While acknowledging the difficulty of any credible effort to estimate the costs associated with the potential reduction in the water available to local municipalities and property owners,” Mr. Hardy requests discussion of costs “arising out of the implementation measures adopted to protect and/or enhance summer flows in the Napa River and its tributaries.”

Please see our response to comment 8.6. The Water Board is not adopting specific implementation measures to increase summer flows in the current Basin Planning action.

Comment Letter no. 9: Living Rivers Council

Comment 9.1: “The Staff Report and proposed Basin Plan Amendment acknowledge the importance of human caused increases in peak flows as a result of changes in land use. Indeed, since 2000 the Sierra Club and later, Earth Defense for the Environment Now (“EDEN”), have documented the importance of increases in peak flows caused by conversions of natural vegetation to vineyard cultivation as a primary vector causing channel instability, including bank failures, channel incision and increases in sediment transport to low gradient reaches of Napa River tributary stream and to the Napa River mainstream.”

We agree that human caused increases in peak flow as a result of land use changes have caused significant enlargement of upland channels (e.g., gully formation) and associated shallow landslides. Such changes collectively contributed approximately 30,000 metric tons/year of sediment to the Napa River, between 1994 and 2004, or about one-sixth of total associated with land uses. We also agree that it is reasonable to hypothesize that human caused increases in peak flow are a contributing factor to the current episode of channel incision along the mainstem of the Napa River. This hypothesis could be confirmed or rejected through field measurement and modeling in the Napa River watershed.

Comment 9.2: “Since 2000 the Sierra Club or EDEN have retained, through my office, the services of hydrologists Dr. Robert Curry and Dennis Jackson to comment on a number of “vineyard conversion” projects in the Napa River watershed and the Erosion Control Plans (ECPs) prepared by vineyard owners pursuant to Napa County Conservation regulations. Both Dr. Curry and Mr. Jackson have consistently found that these ECPs do not accurately evaluate or adequately mitigate impacts associated with increases in runoff from these changes in land use....As Dr. Curry explained in his overview critique of the Conservation Regulations in 2000:

The approach of the Napa County ordinances is fundamentally incorrect and cannot protect either public health and safety or long-term land productivity. The existing ordinances seem to assume that by attempting to capture sediments from upland vineyard conversion areas, downstream cumulative effects are reduced to insignificance. This is not correct. Increased upland sediment yields, while important, are less hazardous to Napa Valley than are the changes in runoff timing, volumes, and rates. Increased runoff does have cumulative downstream effects through changes in rates of runoff and frequency of runoff events of a given magnitude. These changes are likely to be a significant factor in changing sediment loads in the main Napa River through changes in

stability of its side tributaries. (Living Rivers Council comment letter, Exhibit 7, p. 1)

We concur that increased runoff from vineyard development is causing significant increases in sediment supply to the mainstem Napa River through enlargement of headwater channels, gully formation, and associated shallow landslides. We look forward to working with all interested parties to ensure that adverse impacts of peak flow increases are adequately addressed through County environmental permit processes, as well as through adoption of Water Board-issued waste discharge requirements (WDRs) or qualifying for waivers of WDRs, as described in the implementation plan.

Comments 9.3 and 9.4: “The proposed Basin Plan amendment does not propose any specific regulatory limits on human caused increases in peak flows as a result of changes in land use....Instead, the TMDL Implementation plan proposes to rely on County’s enforcement of its Conservation Regulations.” The Living Rivers Council finds the County’s regulations to be insufficiently rigorous.

With regard to limits on increases in peak flow, we note our concurrence with the findings of the Science Advisory Group to the Napa Green Farm Certification Program that vineyards should not increase peak runoff rate by more than 10-15 percent above pre-vineyard conditions. This is the current standard for certification under the Napa Green program. As part of the process of developing and adopting a general waste discharge permit or WDRs waiver policy for grape growers in the Napa River watershed, Water Board staff will recommend this limit on peak flow or a similarly protective performance standard.

Comments 9.5 and 9.6: “Perhaps the Regional Board staff has assumed it does not have the legal authority to regulate human caused increases in peak flows as a result of changes in land use. Any such assumption is incorrect.”

We have not made this assumption.

Comments 9.7-9.10: “The margin of safety for the TMDL is not valid.”

The Clean Water Act, Section 303(d) and associated regulations at 40CFR § 130.7 require that a TMDL include a margin of safety that takes into account any lack of knowledge concerning the relationship between the pollutant loads and desired receiving water quality. The margin of safety may be established implicitly by making conservative assumptions (USEPA, 1991). We propose an implicit margin of safety and have

incorporated conservative assumptions in development of the redd scour target and by calling for actions that go beyond those required to simply address sediment loads and address a number of other limiting factors affecting fish populations.

As stated in the Staff Report Section 4.2, Streambed Scour, the conservative assumption with regard to redd scour is that in order to achieve the target, the sediment TMDL must be achieved and habitat complexity must be enhanced, thus improving both the quality and quantity of spawning and rearing habitat for salmonids and other native fishes. Implementation actions to address other key stressors (e.g., baseflow, temperature, fish passage, and habitat complexity) also contribute to an implicit margin of safety because as the overall quality of habitat quality improves, the condition of native fish and wildlife populations is enhanced beyond that which would be achieved solely through adoption of protective limits on sediment discharges.

Comment 9.11-9.13: “The TMDL must include reasonable assurances that nonpoint sources will be adequately regulated. Reasonable assurances are mentioned in [the] Staff Report (p.68) but there are no explicit standards and no analysis....”

Providing reasonable assurances that nonpoint source control measures will achieve expected load reductions applies when a wasteload allocation is based on the assumption that nonpoint source reductions will occur. Here, the wasteload allocations for urban runoff dischargers were established independent of the nonpoint source load allocations. In any event, on pp. 7-12 of the proposed Basin Plan amendment, we describe reasonable assurances consistent with the state’s *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (SWRCB, 2004) including waste discharge requirements and/or waivers of WDRs.

Comment 9.14: “There is an inherent bias in the calculation of [the] total sediment input rate into four representative tributaries (Staff Report p. 28). The tributaries were selected on the basis of permission to enter [adjoining land]....It is highly likely that tributaries whose owners denied permission to enter have more introduced sediment. Thus the actual sediment input rate into tributaries is likely higher than the calculated rate.”

Based on an extensive field reconnaissance over much of the Napa River watershed (see p. 18 of the Staff Report), and interpretation of high resolution topographic maps (suitable for mapping gullies, landslides, roads, vineyards, and reservoirs), we are confident that the field measurement sites we selected are representative of typical conditions within four tributary watersheds, and elsewhere within the Napa River watershed.

Comment 9.15: “There are other Basin Plan standards that are implicated by this TMDL proposal and targets that must be included in the TMDL for successful achievement of these water quality standards, including turbidity and toxicity standards (See Jackson, at Exhibit 3)... and temperature (See Higgins at Exhibit 5).”

The proposed Basin Plan amendment addresses the Clean Water Act Section 303(d) listing for sedimentation. The Napa River is not listed as impaired by turbidity, toxicity, or temperature and, therefore, as part of this TMDL, targets to address these constituents are not required. Our review of available information (described in detail below) does not support listing the Napa River as impaired by turbidity, or consequently by (turbidity-related) toxicity. The Basin Plan (RWQCB, 1995) defines the water quality objective for turbidity as follows:

Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Changes from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.

The first sentence describes receiving water or ambient water quality conditions that take into account the combined effects of natural processes, point source discharges, and nonpoint source discharges on turbidity and consequent adverse effects on beneficial uses and nuisance. In the second sentence, “relatable to waste discharge” applies to reaches downstream of waste discharges where natural turbidity is greater than 50 NTU. On this point, we agree with the following comments provided by Mr. Jackson that determining natural turbidly levels in watersheds with widespread nonpoint sources may be difficult. “The Basin Plan Standard for turbidity can be applied to spills or point source sediment discharges from say a failed culvert where turbidity above and below the point of discharge can be measured and compared. The Basin Plan Standard for turbidity is unworkable for non-point source sediment discharges because the background turbidity cannot be determined at any given site. ” (Comment letter from Living Rivers Council, Exhibit 3, page 3)

In evaluating whether this objective is not being met, we must consider whether turbidity levels are negatively affecting beneficial uses. A key point here is that turbidity levels must be elevated for a biologically significant period of time. Although very high suspended sediment concentrations can occur during storm peaks (with turbidity being a surrogate measure of this), within a certain range, this is a natural phenomena which fish are adapted to handle. In contrast, low levels of turbidity over longer periods of time can be more harmful. For example, juvenile steelhead’s ability to capture prey may be adversely affected at very low turbidity levels.

To evaluate whether chronic turbidity poses a significant limitation to juvenile steelhead growth, Stillwater Sciences and Dietrich (2002) monitored turbidity levels following storm runoff events in water years 2001 and 2002 in several tributary and mainstem sites within the Napa River watershed to determine how quickly streams cleared up after storms. They defined 20 NTU (nephelometric turbidity units) as a conservative threshold for the protection of fish, with higher values (depending on duration) having the potential to adversely affect the success of juvenile steelhead in capturing their prey during the wet season. Because juvenile steelhead and other native fish seek refuge habitats during the rising limb, peak, and falling limb of runoff events, high turbidity levels during storms do not typically result in lost feeding opportunities. Therefore, turbidity was measured approximately one, three, and seven days after four to five peak runoff events that had recurrence intervals of 1.0-to-1.4 years at 18 sites in 16 tributaries and 6 mainstem sites. Stillwater Sciences and Dietrich (2002) found that turbidity levels typically dropped below 20 NTU within one to two days after the runoff peak, and “therefore turbidity probably did not pose a significant limitation to feeding by steelhead during the period studied.” (SFRWQCB 2002, p. 39) These results support a finding that the Napa River is not impaired by turbidity.

We do not concur with Mr. Jackson’s interpretation of the toxicity objective (Living Rivers Council, Exhibit 3, pp. 11 and 12), or with the assertion that the objective is violated in the Napa River. While we do consider sediments discharged at levels greater than background to be a pollutant, we do not consider these “clean” sediments a toxic substance. Available information does not support the conclusion that water column turbidity and/or fine sediment deposition in the bed of the Napa River are causing acute toxicity. Similarly, there is no evidence of chronic toxicity caused by ambient concentrations of sediment in the water column and/or bed of the Napa River. Please note that sediment reductions called for in the TMDL will further protect aquatic organisms from sediment-related toxicity problems.

With regard to stream temperature, available information is insufficient to determine whether temperatures are elevated in relation to natural background conditions (see *Napa River Basin Limiting Factors Analysis*, Stillwater Sciences and Dietrich 2002, p.46), or if the water quality objective for temperature is being violated in the Napa River watershed. As a precautionary measure, the proposed Basin Plan amendment does recommend implementation actions to reduce stream temperatures in tributaries and the mainstem of the Napa River. Readily available data relating to temperature will be reviewed in 2008 as part of the next round of the Water Board’s 303(d) listing evaluations. In addition, WDRs or waiver conditions for nonpoint source dischargers will address all potential pollutants associated with their discharge, and as such, proposed land use management practices will need to include measures to protect or enhance stream temperatures.

We appreciate the Living Rivers Council's concern that there may be toxicity and temperature problems in the watershed, and we agree that it would be useful to incorporate stream temperature and turbidity monitoring into the TMDL monitoring program. As such the proposed Basin Plan amendment's discussion of "Evaluation and Monitoring" has been modified as follows:

In-channel effectiveness monitoring should be conducted by local government agencies with scientific expertise and demonstrated capability in working effectively with private property owners (to gain permissions for access), as needed to develop a representative sample of stream habitat conditions, in relation to sediment supply and transport within the watershed. In addition, the Water Board will conduct in-channel effectiveness monitoring as part of the Surface Water Ambient Monitoring Program. In-channel effectiveness monitoring needs to include measurements of redd scour and spawning gravel permeability to evaluate attainment of water quality objectives for sediment, settleable material, and population and community ecology. To establish a high level of statistical confidence in estimated values, spawning gravel permeability will need to be measured at 150 or more potential spawning sites located in ten-or-more tributaries, and 50 or more potential spawning sites in the mainstem of the Napa River. Redd scour will need to be measured in the mainstem Napa River at approximately 30 or more potential spawning sites, with 4 or more scour measurements per spawning site. Desired frequency for measurement of permeability and redd scour is once every two to three years. At a minimum, repeat surveys will be conducted once every five years.

In addition to the above described monitoring program to evaluate attainment of numeric targets for sediment, the Water Board will monitor turbidity and residual pool volume. Monitoring will be conducted in a subset of the channel reaches where spawning gravel permeability and/or redd scour are measured. Stream temperature and baseflow persistence will be monitored as part of the Surface Water Ambient Monitoring Program.

Table 5.4 in the Basin Plan amendment has also been revised to expand the list of implementing parties that need to take actions to protect and enhance stream temperature. The revised table is in the response to comment 5.16.

We have revised section 6.6.4 of the Staff Report to clarify our expectation with regard to actions to protect and/or enhance temperature:

6.6.4. Stream Temperature Protection and/or Enhancement

Elevated summer water temperatures that are stressful to juvenile steelhead have been documented over a significant portion of the potential rearing habitat for steelhead in Napa River tributaries (RWQCB 2002). Although subordinate to flow persistence over riffles in relation to its potential significance with regard to steelhead growth, stressful water temperatures do increase metabolic demand, and therefore, likely

contribute to the low summer growth rates documented in the pilot study conducted in 2002 (see Section 6.6.1., Baseflow Enhancement). Actions specified to enhance summer baseflow and habitat complexity in tributaries (e.g., enhanced loading of large woody debris to increase pool frequency, depth, and cover) will also be effective in reducing summer water temperatures, and as such are also recommended, as part of the plan to protect and/or enhance stream temperature. Similarly, riparian corridor vegetation restoration actions, implemented along streams ~~through the Napa Green Certification program (for vineyards and adjacent rural lands under same ownership)~~ per issuance of waste discharge requirements and/or conditional waivers thereof will lead to enhanced shade and large woody debris recruitment, in addition to reducing sediment supply. With the funding already appropriated for Napa Green, more than 12,000 acres of vineyard lands and a similar or greater acreage of adjacent rural lands will implement holistic farm management plans to protect fisheries and water quality. Also, many of the actions needed to address pathogen and/or nutrient pollution loads along streams in rangelands will involve protection and/or enhancement of riparian vegetation along streams draining grazing lands and adjacent rural lands.

Comment 9.16-9.17:We find a significant gap for turbidity-related targets, including total suspended solids and sediment, and light penetration. Although it is distantly related to spawning gravel permeability, a target for residual pool volume is also missing."

As stated in the previous response, our review of available information does not support listing for turbidity, and consequently turbidity-related targets are not required. While we recognize that residual pool volume is an important indicator of a stream's ability to support native fish, our proposed targets for redd scour and gravel permeability are sufficient for assessing the effect of fine sediment deposition in the stream bed. A numeric value that represents a target value for residual pool volumes needs to be scaled based on watershed and sub-watershed characteristics. We do not have sufficient information to propose such a value at this time. We agree that additional data on residual pool volumes would further our understanding about the extent to which this factor may be limiting fish populations. Please see our response to comment 9.15 just above, where we present revisions to the proposed Basin Plan amendment indicating our intent to monitor trends in residual pool volume as part of broader monitoring program for habitat.

Comment 9.18-9.19: "The Linkage Analysis is incomplete because it assumes that the previous analysis, which determined appropriate numerical targets for channel incision and streambed permeability, is complete. If there are other causes of harm to

fish from sediment (besides incision and lack of permeability, i.e., turbidity), they will continue to be ignored, and the TMDL will be incomplete.”

As we stated in our response to comment 9.15, we do not concur that water quality objectives for turbidity are violated in the Napa River. Therefore, turbidity related numeric targets are not required in order for the linkage analysis to be complete.

Comment 9.20: “There are...numeric problems with the ‘natural background’ value....”

Please see our response to comment 1.1.3 where we discuss revisions to Table 2. As we indicate in that response, during the 1994 to 2004 period, an average of approximately 48,000 metric tons per year of naturally derived sediment was deposited and retained in tributary reservoirs located upstream of the confluence of the Napa River with Soda Creek. Adding 48,000 metric tons/year to the natural sediment discharged through tributary dams (7,000 metric tons/year), and then adding sediment inputs to channels downstream of dams (92,000 metric tons/year), yields our estimated total of approximately 147,000 metric tons/year of natural sediment delivery to the Napa River at Soda Creek. Dividing total natural sediment delivery rate by the drainage area of the Napa River at Soda Creek (approximately 584 km²), yields our calculated value of 252 metric tons per km² per year.

Comment 9.21: “The Staff Report translates the sediment delivery value into a permeability value (the numerical target) using Figure 12, but the uncertainty inherent in this translation is [too large]. Figure 12 does not provide a linear or curvilinear relationship that can be trusted with any degree of certainty. Therefore, the permeability target is unreliable.”

In Figure 12 we present the linear regression relationship between reach median values for spawning gravel permeability and average annual rate of sediment input to channels scaled for an index of stream power (e.g., the drainage area multiplied by the slope). Sediment supply is scaled for stream power (or the energy expenditure of water as it flows through a channel) because sedimentation reflects the balance between sediment supply and transport capacity. The correlation coefficient (R^2 value) equals 0.65 leading us to conclude that there is a strong and statistically significant relationship between sediment permeability and sediment supply scaled for stream power. Finally, please note in the revised staff report that Figure 12 is now referred to as Figure 14.

Comment 9.22: “The Staff Report does not provide... calculations that demonstrate the statistical error embedded in the curve depicted in Figure 12,...[or] that

demonstrate the statistical error arising from the use of a point on the curve...as the point of departure for calculating the conversion from the sediment delivery value into a permeability value. As a result, the permeability calculations cannot be trusted, and the impacts of the lack of a margin of safety are compounded.”

The regression relationship between spawning gravel permeability and sedimentation index, which we present in Staff Report Figure 12, is as follows:

$$Y = 12,159 - 2591 \cdot \log_{10}(X); \text{ the correlation coefficient } (R^2) = 0.65$$

In this equation, Y is the reach median value for streambed permeability, as measured in cm/hr., this is the response variable. X is the sedimentation index, which we define as average annual sediment input rate (metric tons/km²/yr) during the 1994-2004 period, divided by an index of stream power, which we define as the product of drainage area (km²) and streambed slope. X is the explanatory variable in the regression relationship.

With regard to examining the statistical error associated with the linear regression, we note that the slope value for the regression (-2591) is significantly different from zero at a P value = 0.003. Furthermore, the 95 percent confidence interval around the slope of the linear regression ranges from (-1144) to (-4047). Therefore, we conclude there is a significant negative relationship between spawning gravel permeability and sedimentation indexes.

With regard to using the regression relationship to predict spawning gravel permeability from the sedimentation index, and evaluating the uncertainty in this prediction, we are happy to expand upon the discussion presented in the linkage analysis. In the linkage analysis, we discussed the case where if the Napa River had achieved the TMDL during the study period (1994 to 2004), then the average annual sediment load would have been approximately 325 metric tons per km² per year in the Napa River at Soda Creek. Using this sediment load value (325 metric tons per km² per year) and a typical value for streambed slope in the Napa River near Soda Creek (slope = 0.002), we are able to calculate sedimentation index:

$$\begin{aligned} \text{Sedimentation index} &= \text{sediment supply} \div (\text{drainage area} \times \text{slope}) = \\ &= (325 \text{ t/km}^2/\text{yr}) \div (584 \text{ km}^2 \times 0.002) = 278 \end{aligned}$$

Rounding the result to two significant figures, we calculate that the sedimentation index equals 280. From our regression relationship, we would then predict that when the sedimentation index equals 280, the reach median value for streambed permeability would be equal to 5820 cm/hr. This permeability value corresponds to 47 percent predicted survival-to-emergence for Chinook salmon eggs in the Napa River at Soda Creek.

With regard to estimating the statistical uncertainty associated with the predicted value for spawning gravel permeability from our regression (5820 cm/hr), we note that the 95 percent confidence level for this permeability prediction interval is 1469–10,171 cm/hr, and the 90 percent confidence level is 2295–9346 cm/hr. This result is consistent with the opinion we provide in Staff Report Section 4.3, Streambed Permeability Background and Rationale, and reflects the state of the science in regard to the ability to predict channel response to sediment supply.

Please note in the revised staff report that figures have been renumbered, and Figure 12 is now Figure 14.

Comment 9.23-9.24: “The linkage analysis also needs to address both low flow and increased peak flow vectors.”

While we agree that low baseflow and increased peak flows are of concern, the TMDL linkage analysis need only relate sediment numeric targets to the sediment sources. Actions to enhance low flow are proposed as part of the broader habitat enhancement plan (Basin Plan amendment Table 5.2, Recommended Actions to Protect or Enhance Baseflow).

Comment 9.25-9.27: “The seasonal variation analysis is incomplete. The Staff Report does not really say anything about how sediment or its impacts vary seasonally. It only refers to flows....This...seriously undermines the rationale for setting a sediment target of 125% or natural level....The natural load to be used to calculate the TMDL will be a set number, not a variable range (as seen in nature), and the resulting TMDL will also be a number, not a range. Thus the allowed sediment will be constant and higher than natural (125%), not at all like the natural variability, which is low most years with occasional spikes. There is no explanation of how the actual amount of sediment will vary seasonally, whether human-caused or natural.”

We do account for seasonal variation by expressing the TMDL as 125 percent of natural background. In response to this comment, we have expanded the discussion of seasonal variation and critical conditions in the Staff Report as follows:

5.5 Seasonal Variation and Critical Conditions

The TMDL must describe how seasonal variations were considered. Sediment input to channels in the Napa River watershed and its effects on beneficial uses are inherently variable on seasonal, annual, and longer timeframes. For this reason, the TMDL and allocations are designed to apply to the sources, and are expressed as a percentage of the natural load during the period of interest.

In the California Coast Range, almost all sediment delivery to channels occurs during the wet season. Although rainfall patterns vary on seasonal, inter-annual, and longer timeframes, review of long-term precipitation data for sites in the Napa River watershed indicates that in most years 90% or more of all precipitation occurs between the months of October and April. Sediment input to channels from natural process sources are positively correlated to precipitation volume and/or intensity. Shallow landslide failures whether caused by natural processes or land use activities, typically occur during high intensity precipitation events occurring when the soil is already wet as a result of antecedent rainfall. Sediment delivery to channels from shallow landslide failures in the Napa River watershed is low during most wet seasons, and high during very wet years (winter of 1997-1998) and/or during very high intensity storms (e.g., New Year's Eve in 2005). Gullies, almost all of which in the Napa River watershed are associated with land use activities, are typically formed during high intensity storm events at sites where land use activities have intensified peak rates of storm runoff.

Most channel incision and associated bank erosion along the Napa River occurs during large infrequent runoff events (e.g., recurrence intervals greater than 10 years), and/or in years of average or above normal runoff that immediately follow such events. Other land-use related sources, such as sheetwash erosion associated with vineyards and/or roads are chronic, in that they occur during the wet season almost every year, with rates being proportional to precipitation.

Critical conditions with regard to flow are addressed through implementation actions to protect or enhance baseflow as described in Chapter 6....

Comment 9.28: "CEQA requires an accurate, stable, and finite project description. ...The proposed Basin Plan amendment and TMDL implementation plan are fatally vague with respect to what measures will be used to achieve the TMDL standard."

To address this comment, staff has revised the project description following the checklist in Chapter 7 of the Staff Report. Please see the revised Chapter 7 at the end of this Responses to Comments document.

Comment 9.29: "CEQA requires that the Board consider the cumulative effects of the project in combination with other closely related projects. [The documents] do not include a consideration of many aspects of the hydrologic regime in the Napa River watershed, or of the changes in land use that are responsible for this hydrologic regime."

We know of no projects that in combination with this project would result in significant cumulative effects to the environment. The scientific studies that form the basis of the TMDL were conducted throughout the watershed and considered many aspects of the hydrologic regime. In November 2005, we conducted a CEQA scoping meeting to solicit input on environmental effects that potentially could result from our proposed project, and whether there are any closely related projects that could result in cumulative effects. No projects were brought to our attention. Based on our analyses and the years of field work in the watershed, we conclude that approval of the proposed Basin Plan amendment will not result in any potentially significant impacts to the environment.

Please keep in mind that the Water Board is not a land-use planning agency and we are not in a position to prohibit urban or vineyard development as suggested in exhibit 5. It is within the Water Board's authority to impose discharge restrictions related to nonpoint source related land-uses to protect beneficial uses. The proposed project does just that.

Comment 9.30-9.31: The Council cites recent case law (City of Arcadia v. SWRCB 2006) to substantiate its claims that the Environmental Checklist format is "insufficient...for analyzing environmental impacts"; that the Water Board must "perform...an environmental analysis of the reasonably foreseeable methods of compliance" including "reasonably foreseeable mitigation measures" for potential environmental impacts of implementation. "The Council also infers from City of Arcadia v. SWRCB that the Water Board must analyze "temporary impacts of the construction of...pollution controls."

In response to this comment, we have revised the explanations for the boxes selected in the environmental checklist section of the Regulatory Analyses (Chapter 7), for each of the following resource categories:

III. Air Quality
IV. Biological Resources
V. Cultural Resources
VI. Geology and Soils
VIII. Hydrology and Water Quality
XI. Noise

Please see the revised Chapter 7 at the end of this document.

Comment 9.32-9.33: The Staff Report anticipates that local lead agencies will analyze the environmental impacts of mitigation measures during project-level environmental review. The Council states that "without analyzing mitigation measures (in the

present Staff Report), the conclusion that the impacts would be mitigated below the level of significance can not be supported by the evidence.”

We have revised the regulatory analyses contained within the Staff Report to address this comment. Please see the revised Chapter 7 at the end of this document.

Comment 9.34: “The Staff Report fails to consider a reasonable range of alternatives, such as alternatives that would include numeric targets for the turbidity, toxicity, and temperature Basin Plan standards discussed [in Comment 9.7 and consultant reports provided by the Council].”

We evaluate reasonable alternatives to the present project as part of our Regulatory Analyses, as required by CEQA. The purpose of this analysis is to determine whether there is an alternative that would resolve the problem (i.e., restore a sustainable fishery for steelhead and Chinook salmon) and result in less environmental impact. Since the Napa River and tributaries are not listed in any Clean Water Act 303(d) list as impaired by these pollutants, we have not included setting TMDL targets for turbidity, toxicity, or temperature among the reasonable alternatives we analyze in Chapter 7 of the Staff Report.

Comment letter no. 10: Napa County Farm Bureau

Numbering of the Farm Bureau's comments conforms to the numbering in their letter.

Comment 10.1: "We agree with the stated goals listed on page one. But the Basin Plan amendment should also recognize the multiple beneficial uses within the watershed. We suggest adding another bullet point that states, 'Balance the needs of all of the beneficial uses, including agricultural and municipal water supplies.'"

All of the beneficial uses of the Napa River are recognized in the current Basin Plan, and in Staff Report section 1.1, Background. With regard to balancing competing demands, the Porter-Cologne Water Quality Control Act codifies the commitment of the Water Board in this regard (California Water Code, Division 7, § 13000):

"...attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible."

We do not find it necessary to add the additional goal the Farm Bureau suggests. Please see our response to Comment 2.2/3.2, where we state explicitly the actions we are proposing, and our intent. Please note that recommended actions to protect and/or enhance baseflow in the proposed Basin Plan amendment do not involve any new regulations and/or regulatory actions by the Water Board.

Comment 10.2: We incorporate by reference the comments submitted by Napa County....

Please see staff's responses to Comment Letter no. 5.

Comment 10.3: "Tables 4.1 and 4.2 outline the implementation measures for vineyards and grazing lands. We believe the recommended actions are unnecessary and unwarranted at this time, as Water Code section 13369 expressly allows for the Regional Board to include non-regulatory implementation of best management practices....Please amend Table 4.1 and 4.2 (Basin Plan amendment) with the following substitute language for the recommended actions:

- **Consistent with the authority granted to the RWQCB in the California Water Code, persons who have discharged, or are discharging, or who propose to discharge waste that could affect the quality of waters of the state shall furnish information necessary for the RWQCB to evaluate implementation of this**

TMDL. This information may include, but is not limited to: description of the agricultural lands, identification of site specific erosion control measures, and a schedule for implementation of identified management measures as needed to achieve performance milestones listed below in Table 6. Any request by the RWQCB shall include a written explanation with regard to the need of the reports, and shall identify the evidence that supports the request for the information.

- **As necessary, implement management practices that will reduce or prevent sediment in the Napa River.**

The *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (SWRCB, 2004) guides the Water Board in enforcing the nonpoint source pollution control program referenced in 13369(b) of the California Water Code. Because the land types listed in Tables 4.1-4.4 have been identified as significant contributing sources to water quality impairment by sedimentation of the Napa River, by definition they are adversely affecting water quality. Therefore, as stated in the policy referenced above, our only options are regulatory, including the following administrative permitting options:

- a) Discharge prohibitions
- b) Waste discharge requirements
- c) Conditional waivers of waste discharge requirements

Of these three permitting authorities, conditional waivers are the most flexible option. By definition they are “regulatory-based incentives for [implementation of] best management practices.” The Water Board intends to develop conditional waivers of waste discharge requirements for individual discharges and/or coalition groups, which would apply to all of the land types listed in Tables 4.1-4.4 including vineyards and grazing lands. We expect these conditional waivers to be adopted before the fall of 2010, and ideally by the fall of 2009.

Comment 10.4: “Tables 5.1–5.4 (Basin Plan amendment) should be removed from this TMDL because they are outside the scope of this project and many of the proposed actions and objectives are wholly outside the purview of the RWQCB.” Referencing the same tables, “the prescriptive nature of the proposed actions and management objectives is also concerning; e.g., the TMDL requires the state to ‘adopt reservoir bypass flows as needed....’ and ‘to enhance conditions for adult and juvenile salmon and juvenile steelhead passage at Zinfandel Lane. These action specific mandates are outside the authority the legislature granted to the RWQCB.’”

As stated at the beginning of the proposed Basin Plan amendment, our goals are broader than solely achieving the sediment TMDL and related water quality objectives.

Furthermore, we have identified human-induced alterations of baseflow, water temperature, fish passage, and habitat complexity as potential threats to water quality. The Water Board has the responsibility as well as the authority to address these impacts.

With regard to “the prescriptive nature of the proposed actions [to enhance habitat]”, please see our response to comments 2.2/3.2 and 5.16.

Also, note that almost all of the recommended habitat enhancement actions that we listed are already underway or proposed by local groups working in cooperative partnerships with landowners, and local, state, and/or federal government agencies; the only exceptions are recognition of the Division of Water Rights’ regulatory program activities, and the requirement for local municipalities to develop performance standards for protection of ecologically significant large woody debris in stream channels, as an element of the Napa County Stormwater Management Program.

Finally, we do not concur that California Water Code limits the Water Board in the manner the Farm Bureau suggests. As always, we are open to further discussion of additional questions or concerns that the Farm Bureau may have relating to the proposed Basin Plan amendment and its implementation.

Comment letter no. 11: Natural Resources Conservation Service (NRCS), Napa Field Office

Philip Blake, District Conservationist for the Napa Field Office submitted comments and attached a letter sent to the Water Board on March 20, 2006.

Comment 11.1: “I am...puzzled that the water board would suggest that the county or vineyard owner/ operator would be expected to submit individual reports on vineyard operations (Table 4.1), for surface erosion associated with vineyards. The county's conservation regulations are widely regarded as one of the most intensive and comprehensive water quality protection programs instituted in the nation, and to require this kind of governmental reporting overlap seems onerous, and quite frankly, unnecessary....Table 4.1 does make mention of WDR waiver options, and the county's own public records could link the conservation regulations program as group WDR waiver, in and of itself.”

It is our intent to develop conditional waivers of waste discharge requirements for individual discharges and/or coalition groups that would apply to the land types listed in Tables 4.1-4.4. We expect the conditional waivers to be adopted by the Water Board on or before the fall of 2010, and ideally by the fall of 2009. With regard to demonstrating attainment of the performance standard for vineyard surface erosion, we expect reporting requirements to be minimal. We will work with grape grower organizations and Napa County to avoid unnecessary paper work.

Comment 11.2: “Roads and other legacy erosion issues noted in table 4.1 can be very effectively addressed by watershed stewardship actions on a sub-basin level. Indeed, these kinds of comprehensive, multi-landowner scale efforts are far more likely to yield effective water quality compliance when they are carried out through a stewardship effort that brings to bear both public funding and public technical assistance, as well as group accountability dynamics.”

We are very receptive to the idea of working with watershed stewardships, and providing an option for such groups to participate in conditional waiver programs.

Comment 11.3: “The document should also note that conservation farm plans developed by the NRCS are also addressing whole-farm conservation planning. For those not choosing to pursue green certification, vehicles such as NRCS conservation plans provide an important alternative. NRCS is partnering closely with the [Napa] Green Certification program, but clearly, wider options for landowner compliance vehicles should be recognized by the board if large scale, comprehensive results are to be expected.”

We are open to recognizing other programs including the NRCS farm conservation planning program, and would appreciate receiving both information about the program and also the opportunity to tour Napa River watershed farms where such farm plans have been implemented. We recognize Napa Green because we are familiar with the program. Over the past two years, we have participated in farm plan certifications for over 7,000 acres of vineyards within the Napa River watershed.

Comment 11.4: Referencing Table 4.2 in the proposed Basin Plan amendment, the commenter states that “Our field data as well as many years of field observations do not support the board's contention that grazing is a current source of surface erosion.”

We think the proposed performance standard for rangeland surface erosion is reasonable, and concur that it is likely already being achieved at almost all livestock ranches in the watershed. Therefore, attaining the standard should not be a burden, and maintaining this standard will greatly reduce the likelihood of high rates of sheetwash erosion from pastures from occurring at a future date.

Comment 11.5: “Legacy erosion and road erosion sources are extremely difficult to address at any scale, and without tremendous infusions of public funds, a ranching enterprise simply can't pay the bills on correcting these types of erosion. As an example, recent work by NRCS on a local ranch with gully and landslide erosion problems yielded an estimate in excess of \$100,000 to construct basic repairs.”

We are aware of these challenges and appreciate receiving these comments. We are open to creative and cost-effective approaches for reducing sediment delivery associated with land use activities. With regard to addressing legacy sources, we will consider technical and economic challenges, as well as the need to achieve water quality standards.

Comment 11.6: “We urge the board to revisit the information we have already presented, and to coordinate closely with the working group, which includes Napa County ranchers, Napa County Farm Bureau, UCCE, and NRCS, to draft a practical and effective approach to assisting county ranch land owners and lessees with a group WDR waiver program....The Napa County Ranch Commodity Group has prepared a draft program to address pathogen TMDL concerns in the Napa River watershed. A similar approach that emphasizes education and group compliance through locally-prepared guidelines would be far more effective in addressing sediment TMDL measures than the standard, prescriptive approach that is advocated in the proposed basin plan amendment.”

We have coordinated closely with these groups and other interested parties in examining nonpoint pollution control issues associated with rangelands in the Napa River watershed. We look forward to pursuing with NRCS our objective of developing water quality plans for grazing lands that will be effective in controlling the discharge of all pollutants of concern to the Napa River and its tributaries, including pathogens, sediment, nutrients, and heat (e.g., solar radiation as it relates to stream temperatures). We encourage stakeholders in the watershed to come forward with suggestions for a development process leading to water quality plans for grazing lands, including related monitoring and reporting, and a conditional waiver program for individuals or groups of dischargers.

Finally, we have proposed quantitative performance standards for the control of sediment delivery from pastures and roads, as needed to support the development of an effective water quality control program that is consistent and fair, where performance can be measured. Guidelines for minimal amounts of residual dry matter have been used by the Bureau of Land Management, NRCS, US Forest Service, US National Park Service, and other public and private landowners for more than two decades as an effective tool for prevention of erosion and nutrient losses from pastures. The performance standard for sediment delivery from road-related erosion is also reasonable and fair because:

- a) Most sediment delivery associated with roads in the Napa River watershed comes from road surface erosion, which for dirt roads, can be resolved through inexpensive changes to road surface drainage patterns (e.g., out-sloping of the road surface, and/or installing rolling dips or water bars, etc.).
- b) Road density is typically quite low in rangeland parcels (e.g., < 3 miles per square mile of land area), and many roads are in upper slope locations where sediment delivery rates are already lower than the proposed performance standard.
- c) Landowners have until 2025 to achieve the proposed performance standard.

Comment 11.7: “Measures intended to track, address, and monitor erosion and sediment contribution from rural roads, (farm and ranch included), are among some of the most difficult TMDL sources to address. This source spans all land uses, and may be one of the most difficult to treat and monitor. Many roads in hillside lands have been constructed in geologically unstable areas or steep terrains that require constant maintenance. Rural road maintenance and non-point source control represent a constantly moving target, and could not realistically be assigned an end date for completion of best management practices, or a sustainable goal for sediment reduction. Adequate development standards for new roads, education, and incentives

programs could go a long way in helping the county and landowners reduce non-point sources, but the goals as currently stated simply don't provide realistic and trackable progress. A far better approach would establish a series of best management practices and road maintenance guidelines, tracking progress through statistical sampling."

Although we agree that rural roads present significant challenges with regard to engaging a large proportion of the rural private property owners in the watershed, not already affiliated with an agricultural organization or a watershed stewardship, we nevertheless conclude that effective approaches will have to be developed to achieve water quality standards. As the commenter suggests, one such approach may be through providing conditional waivers to stewardship groups, and working to expand involvement in stewardships throughout the watershed. We would enjoy the opportunity to work with NRCS and others to achieve this goal.

We also agree that road maintenance guidelines and training to public agency staff and private contractors would be an important aspect of an effective program to control road-related sediment delivery to channels. However, we do not concur that it is difficult to estimate potential future rates of sediment delivery to channels from road-related erosion (see Weaver and Hagans, 2006), and/or that the level of performance we have specified is technically or economically challenging to achieve. As always, we are interested in continued discussion, and open to learning about other approaches that may be effective.

Comment 11.8: "One of the most important incentives the board has not committed itself to is to help expedite permits for small restoration projects, (which make up a significant amount of the work to be done). Since 1997, the CIG, (Napa County Conservation Information Group), made up of several local, state, and federal agencies, has attempted to establish a coordinated permitting system...designed to provide incentives for property owners to select restoration alternatives for riparian areas, in return for expedited processing of permits. ...The regional board regulatory staff have never committed to move this approach forward. I find it ironic that the regional board is willing to set high standards and expected actions, and yet refuse to come to the table to partner in this very necessary element of support."

We disagree with this comment, as we have been and will continue to be a reliable partner in trying to expedite environmental permits for small restoration projects. We agree that this is an important priority and one that can be achieved working as partners.

Comment 11.9: Many of the sediment source performance standards and required actions can best be handled on a sub-watershed basis....Attainment of load allocation targets for most of the listed sources [is] daunting on a basin level, but become[s] much more approachable within reaches of the river, or river tributary level where groups of landowners have agreed to attempt to do their part to protect and restore water quality. I strongly suggest that the board offer a major incentive for these groups to manage and restore soil and water resources by providing a mechanism to certify achievement of TMDL goals for sub-basins.

Please see responses to comments 11.2 and 11.7.

Mr. Blake also attached a March 20, 2006, letter he and Morgan Doran, Livestock and Natural Resource Advisor for the UC Cooperative Extension in Fairfield, California, submitted to Water Board staff in response to draft conditions for a waste discharge requirement waiver program for grazing lands. Most of the comments in the letter pertain directly to the waiver development process for grazing lands, which is in progress and will include ample opportunities for public participation in the near future. One comment is germane to the Napa River Sediment TMDL and Habitat Enhancement Plan.

Comment 11.10: “Rather than requiring specific ingredients, ranchers should be encouraged to develop a plan that is designed to achieve water quality objectives....Ranchers should be judged on the criteria that they have a plan with objectives, they are implementing the plan and they are making progress towards achieving their objectives.

Please see our response above to comment 11.6, and responses to County of Napa (comments 5.6 and 5.7), where we describe our expectations and supporting rationale.

Comment letter no. 12: NOAA National Marine Fisheries Service

Comment 12.1: NMFS would like to express its support for the TMDL and Habitat Enhancement Plan. NMFS believes that the implementation actions called for in the TMDL will aid in the recovery of CCC steelhead in the watershed and benefit the Chinook salmon population.

We're grateful to NMFS for their support, and especially for their participation in our work developing the TMDL and Habitat Enhancement Plan.

Comment 12.2: The implementation plans calls upon NMFS to participate n forums related to: 1) addressing low flow/water supply and fisheries conservation concerns, 2) considering reservoir bypass flow requirements to protect salmonids, 3) to aid in planning a water rights compliance survey to be conducted by the County of Napa and the State Water Board Division of Water Rights, and 4) to help identify and remedy significant structural impediments to salmonid migration in ten tributaries. NMFS will participate in these forums as well as continuing our participation in other projects related to the implementation plan such as Upper York Creek dam removal, the Napa Green Certification Program, and the Watershed Information Center and Conservancy technical advisory committee...."

We welcome NMFS' participation in all of these important efforts.

Comment letter no. 13: Rutherford Dust Restoration Team (John Williams and Davie Pina)

Comment 13.1: “[We] want to lend our support for your Basin Plan amendment....We think voluntary compliance is the only way to assure that restoration is comprehensive and continues into the future....As a grassroots organization we have educated our river owners to be part of the answer....”

We thank Mr. Williams and Mr. Pina for their support. We hope to see voluntary commitments, such as those made by members of the Rutherford Dust Restoration Project, continue, and continue to make significant contributions to successful habitat restoration in the Napa River watershed.

Comment letter no. 14: Ed Schulz (submitted by Shirleen Hall)

Comment 14.1: Mr. Schulz speaks of “the fundamental disequilibria of the primary limiting factors which have long been identified,” which he describes as “the bedload contributions from the best habitat on the primary tributaries... trapped behind dams.” He states that “this imbalance is a simple one to rectify, yet nowhere do your documents identify methods or intent to achieve a dynamic equilibrium....Who says your sediment reduction plan won’t worsen the downcutting problem by further limiting potential aggradation?” Mr. Schultz suggests that the solution is “to reintroduce gravels and cobbles to achieve a natural and dynamic equilibrium” rather than reducing sediment inputs.

While we agree it is likely that tributary dam construction has contributed to the current episode of bed and bank cutting in the Napa River, other management actions also appear to be significant including:

- a) Land cover changes that have increased peak flows in the river (e.g., vineyards, rural residences, commercial buildings, and roads); and
- b) A suite of direct alterations to the river channel and/or its floodplain (e.g., levee building, channel straightening, filling of side channels, removal of debris jams, historical gravel mining, and dredging).

We also agree that bed and bank erosion rates in the Napa River will not be substantially decreased until the imbalance between coarse sediment supply (e.g., cobbles and gravel) and transport capacity is rectified. We differ however in our diagnosis of the relative significance of various contributing factors (e.g., dams, direct alterations to the channels, and land cover changes) and in our conclusions regarding feasibility of various management measures to address this issue. Instead of introducing large quantities of coarse sediment to the channel, which would be extremely expensive and present important questions regarding technical feasibility and potential to substantially increase flood risk, we conclude that it is possible to solve this problem by focusing primarily on the other contributing factors: the direct alterations to the channel and increases in peak flow.

The approach to restoration being emphasized in the Rutherford Reach (which we recognize as a key action in the plan to reduce fine sediment supply and enhance habitat conditions) involves setting back the river banks, increasing the sinuosity of the river (and hence reducing its slope), adding wood and large rock to force additional gravel bars to be deposited, and enhancing riparian vegetation to increase bank stability. We also call for design and management practices for new and replanted hillside vineyards to attenuate increases in peak runoff (see response to Comments 9.3 and 9.4). We think

these approaches will prove effective in the reduction of bed and bank erosion rates along the Napa River.

Finally, we should point out that channel responses to dam construction may vary substantially depending upon significance of the sediment supply from upstream areas relative to areas downstream of the dam, how the dam influences the frequency and duration of high flows that shape the channel, and/or in response to other significant changes (increases/decreases) in sediment supply from downstream areas following dam construction (Ligon, Dietrich, and Trush, 1995; Grant, Schmidt, and Lewis, 2003).

In the case of the Napa River, we have developed sediment budget data (RWQCB, 2006) that provides an opportunity to examine the combined effects of the dams and other human actions on coarse sediment supply to the Napa River. During 1994-2004, average annual coarse sediment supply to the Napa River at Soda Creek was approximately 51,000 metric tons per year. Absent dams and human-caused erosion, the supply during this period would have been approximately 45,000 metric tons per year. If the reductions in sediment supply recommended under the proposed TMDL are achieved, during a similar future period, we estimate that the average annual coarse sediment supply would be approximately 39,000 metric tons per year. This supply is approximately equivalent to the natural supply. Therefore, we do not conclude that the proposed reductions in human-caused erosion (where we primarily target sand and finer sediment) will further exacerbate bed and bank cutting. Based on theory, we would expect instead that the river bed would be further coarsened, creating more favorable conditions for spawning and rearing (Dietrich et al., 2005).

Finally, we would point out that several Napa River tributaries were naturally disconnected from the river, and hence, much of their coarse sediment did not naturally reach the mainstem, and instead was deposited in large alluvial fans. Many of these channels were ditched soon after California's statehood to support agricultural and urban development of the Napa Valley.

Comment 14.2: "With respect to the Staff Report, 6.6.2, the vague allusion to possible unidentified fish barriers is a contemptible lie. For years I have tried to get your interest in a well-identified fish barrier on Sarco Creek...."

As we note in section 6.6.2, surveys have identified at least 69 barriers to fish passage in the watershed. However, we are certain that there are more, and comprehensive surveys of the key steelhead tributaries are needed to identify and prioritize them for remediation.

Although Sarco Creek has not been identified as a key tributary for steelhead, we note that the Napa County RCD plans to conduct comprehensive fish habitat surveys in this

and other southern tributaries to the Napa River during the summer of 2007. As for fish passage conditions in Sarco Creek, Water Board staff are aware of several road crossings over the creek, and eleven on-channel dams. We are familiar with the results of an informal evaluation of fish passage conditions at the road crossing at Vichy Avenue, which was conducted by RCD staff. Based on RCD staff's observations of conditions, staff considers this crossing an obstacle, but not a significant impediment to adult spawning migration or juvenile emigration from Sarco Creek. (RCD staff also indicate that the culvert does appear to present a complete barrier to upstream migration by juvenile steelhead, and therefore, may have the potential to reduce juvenile survival within the creek)

Finally, although we have been copied on several complaints from the commenter, we are not aware of ever receiving information specific to fish passage barriers on Sarco Creek, or of Mr. Schulz's interest in receiving our assistance in remedying such a problem. If anyone has information in addition to what we have presented above, we encourage residents of the watershed to bring it to the attention of RCD staff, so that they can evaluate these sites during their survey this summer. If the commenter is aware of fish passage problems that may involve violations of water quality laws, we would appreciate hearing about them.

Comment letter no. 16: U.S. Environmental Protection Agency

Comment no. 16.1: “The analysis supporting the TMDL includes very robust and innovative work and we commend your staff for their hard work on the project. In particular, the numeric target analysis and source analysis represent solid technical analysis.”

Water Board staff appreciate US EPA’s support for our overall approach and analyses of the complex issues in the Napa River watershed.

Comment no. 16.2: We commend the Regional Board for proposing an implementation approach that addresses each of the key stressors in addition to sediment loads that contribute to Napa River impairment. In particular, we support the implementation provisions in (proposed Basin Plan amendment) Table 5.2 designed to enhance baseflow. We...note that federal regulations require that TMDL determinations take into account critical conditions for stream flow and other water quality parameters.”

As we have stated, the goal of this TMDL is to restore and protect the fishery, and ensure a healthy Napa River for the future. To accomplish this goal, all of the stressors need to be identified and addressed. We are gratified to have U.S. EPA’s support.

Comment no. 16.3: “To ensure the TMDL is approvable under federal regulations, the TMDL needs to be revised to more specifically identify the estimated natural loading levels, or range of loading levels, against which the ‘125% of natural background load’ is to be compared....When making the needed revisions to the TMDL and allocations, it will also be important to clarify the averaging periods applicable....As drafted, it is unclear how implementation of the allocations would be measured.”

In response to this comment, we have revised the Basin Plan amendment as follows. Related revisions to Table 3 may be seen in the response to comment 1.1.4.

Total Maximum Daily Load and Allocations

The Napa River sediment TMDL is established at 185,000 metric tons per year, which is approximately 125 percent of natural background load (based on sediment load estimates from the 1994-2004 period) calculated at Soda Creek. Natural background load depends upon natural processes, and varies significantly. Therefore, the TMDL and allocations are expressed both in terms of sediment mass and percent of natural background. The percentage-based TMDL, 125% of natural background, applies throughout the watershed. In order to achieve the TMDL,

controllable sediment delivery resulting from human actions needs to be reduced by approximately 50 percent from current proportion of the total load (Table 3 3a and 3b). TMDL attainment will be evaluated at the confluence of Napa River with Soda Creek, which approximates the downstream boundary of freshwater habitat for salmon and steelhead. Attainment of the TMDL will be evaluated over a 5-to-10-year averaging period.

Because dams trap almost all upstream sediment inputs to channels, natural sediment input to channels downstream of dams equals only 62 percent of the total natural background load (e.g. amount that would have been input to Napa River absent dams and human caused erosion). Almost 50 percent of the TMDL can be allocated to human-caused sources, and ~~the~~ The TMDL equal to 125 percent of natural background load, can be achieved if human-related sources are reduced to the level of the allocations shown in Tables 3 3a and 3b).

The Staff Report Chapter 5, Section 5.3, and Table. 9 have been revised accordingly. Revisions to the wasteload allocations are further discussed and shown in the response to comment 16.5, below.

5.3 Allocations

Therefore, consistent with the approach used in other northwestern California streams, and based on predicted attainment of the spawning gravel permeability numeric target, the Napa River sediment TMDL is established as 185,000 metric tons per year, which is at 125 percent of the natural background load estimated for the 1994-2004 period (Tables 9 9a and 9b of the Staff Report). Allocations by sediment source category are specified as a percentage of the natural background. An estimate of the percent reduction from current proportion of the total load is also provided. In 1994-2004, about two-thirds of sediment discharged to Napa River was from land use activities. With attainment of the TMDL, slightly less than one-half of all sediment discharged to Napa River would be from land use activities.¹

Overall, discharges from human-caused sources of sediment must be reduced from 1994–2004 levels by approximately 50 percent, in order to achieve a TMDL of 125 percent of natural background. As shown Table 9b, no reductions are required from the point source dischargers. Point sources are currently regulated, and existing (as well as future) permits require the implementation of best management practices (BMPs) to control erosion and sedimentation. Implementation of BMPs is expected to achieve the wasteload allocations. Loads and wasteload allocations from the three

¹ The sediment TMDL is 125 percent of natural background load, or that load that would have been discharged to mainstem Napa River absent dams or human caused erosion. Because about 30 percent of the watershed drains into dams, a significant fraction of natural load is deposited in tributary reservoirs, and therefore, only about 67 percent of natural sediment inputs to channels are delivered to mainstem Napa River. As such, it is possible to allocate almost this amount (e.g., 59 percent of natural background) to land use sources, and still achieve the TMDL.

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wastewater treatment plants discharging to the Napa River above Soda Creek are calculated based on their current flows and permitted TSS (Total Suspended Solids) concentrations. Existing permitted effluent limits of 30 mg/L TSS are consistent with the wasteload allocations for wastewater treatment plant discharges and will be maintained as the implementing mechanism.

Table 9a. Load Allocations

<u>Source category</u>	<u>Load during 1994-2004</u>		<u>Estimated reductions needed (percentage)</u>	<u>Load allocations</u>	
	<u>Metric tons/year</u>	<u>Percentage of Natural Background</u>		<u>Metric tons/year</u>	<u>Percentage of Natural Background</u>
<u>Land areas upstream of dams</u>					
▪ <u>Natural processes</u>	<u>7,000</u>	<u>4.8</u>	<u>0</u>	<u>7,000</u>	<u>4.8</u>
▪ <u>Human actions</u>	<u>11,000</u>	<u>7.5</u>	<u>51</u>	<u>5,000</u>	<u>3.6</u>
<u>Land areas downstream of dams</u>					
▪ <u>Natural processes</u>	<u>92,000</u>	<u>63</u>	<u>0</u>	<u>92,000</u>	<u>63</u>
▪ <u>Human actions:</u>					
o <u>Channel incision and associated bank erosion</u>	<u>37,000</u>	<u>25</u>	<u>51</u>	<u>18,000</u>	<u>12</u>
o <u>Roads</u>	<u>55,000</u>	<u>38</u>	<u>51</u>	<u>27,000</u>	<u>18</u>
o <u>Surface erosion associated with vineyards and grazing</u>	<u>37,000</u>	<u>25</u>	<u>51</u>	<u>18,000</u>	<u>12</u>
o <u>Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing</u>	<u>30,000</u>	<u>20</u>	<u>51</u>	<u>15,000</u>	<u>10</u>
<u>TOTAL</u>	<u>269,000</u>			<u>182,000</u>	<u>123</u>
Note: Above estimates for loads, percent reductions, and allocations are rounded to two significant figures					

Table 9b. Wasteload Allocations

<u>Point Source Category</u>	<u>Current Load</u>		<u>Reductions needed (percentage)</u>	<u>Wasteload Allocations</u>	
	<u>Metric tons/year</u>	<u>Percentage of Natural Background</u>		<u>Metric tons/year</u>	<u>Percent of Natural Background</u>
<u>Construction Stormwater-NPDES Permit No. CAS000002</u>	<u>500</u>	<u>0.3</u>	<u>0</u>	<u>500</u>	<u>0.3</u>
<u>Municipal Stormwater NPDES Permit No. CAS000004</u>	<u>800</u>	<u>0.5</u>	<u>0</u>	<u>800</u>	<u>0.5</u>
<u>Industrial Stormwater NPDES Permit No. CAS000001</u>	<u>500</u>	<u>0.3</u>	<u>0</u>	<u>500</u>	<u>0.3</u>
<u>Caltrans Stormwater-NPDES Permit No. CAS000003</u>	<u>600</u>	<u>0.4</u>	<u>0</u>	<u>600</u>	<u>0.4</u>
<u>Wastewater Treatment Plant Discharges^a</u>					
<u>City of St. Helena NPDES Permit No. CA0038016</u>	<u>30</u>	<u><0.1</u>	<u>0</u>	<u>30</u>	<u><0.1</u>
<u>Town of Yountville/CA Veteran's Home NPDES Permit No. CA0038121</u>	<u>30</u>	<u><0.1</u>	<u>0</u>	<u>30</u>	<u><0.1</u>
<u>City of Calistoga NPDES Permit No. CA0037966</u>	<u>40</u>	<u><0.1</u>	<u>0</u>	<u>40</u>	<u><0.1</u>
<u>TOTAL</u>	<u>2500</u>	<u>2</u>		<u>2500</u>	<u>2</u>
a. For wastewater treatment plant discharges, compliance with existing permit effluent limit of 30 mg/L of TSS is consistent with these wasteload allocations Note: Above estimates for loads, percent reductions, and allocations are rounded to two significant figures					

Table 9. Total Maximum Daily Load and Load and Wasteload Allocations			
Source category	Load during 1994-2004 (percentage of natural load)	Estimated reductions needed (percentage)	Load allocations (percentage of natural load)
Land areas upstream of dams			
▪ Natural processes	5	0	5
▪ Human actions	8	50	4
Land areas downstream of dams			
▪ Natural processes	62	0	62
▪ Human actions:			
○ Channel incision and associated bank erosion	26	50	13
○ Roads	36	50	18
○ Surface erosion associated with vineyards and grazing	24	50	12
○ Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing	20	50	10
			Wasteload allocation (Percentage of natural load)
○ Urban stormwater runoff	2	50	1
TMDL			125

Comment no. 16.4: The “Staff Report does not provide a sufficient rationale to support a finding that meeting the TMDL at Soda Creek, near the bottom of the watershed, would be sufficient to result in attainment of the water quality standards and associated numeric targets at important locations upstream in the Napa River and its tributaries. Please provide a more robust analysis to support the selection point and explain how allocations that apply at locations far upstream from that location would be applied.”

Implementation actions to reduce sediment delivery to channels associated with land use activities apply, and will be carried out, throughout the watershed. We calculate the mass-based TMDL at Soda Creek because it is approximately the downstream limit of mainstem Napa River salmon habitat. However, the percentage-based TMDL, 125 percent of natural background load, applies throughout the watershed, as shown in the revised Table 3 of the Basin Plan amendment (see response to comments 1.1.4 and 16.3). The TMDL sediment targets (spawning gravel permeability median value ≥ 7000 cm/hr and streambed scour mean depth ≤ 15 cm) apply to potential spawning sites throughout the watershed.

Comment no. 16.5: “The wasteload allocations (WLAs) in the proposed TMDL are not sufficiently detailed to meet federal regulatory requirements or to provide clear guidance as to how NPDES permits should address these WLAs....It is necessary to subdivide the WLA among the individual permitted dischargers.”

Point source discharges of sediment account for a very small fraction of the watershed’s sediment load, and were originally grouped into the category of “urban stormwater”. In response to this comment, we have refined our calculation of the loads and wasteload allocations for point source discharges. We have revised the point source loads and WLAs to subdivide the loads and WLAs among the individual permits, as shown in the revised Tables 3a and 3b of the Basin Plan amendment (see response to comment no. 1.1.4). In addition we revised the introductory text to these tables in the Basin Plan amendment as follows:

Regulatory Tools

The only point sources of sediment identified in Tables 2 and 3b are those associated with urban stormwater runoff (e.g., municipal stormwater, runoff from State highways, and industrial and construction discharges) and wastewater treatment plants, which are regulated by NPDES permits. Table 4.0 shows implementation required of these sources.

We have also revised Section 3.4 of the Staff Report, Approach to Measurement of Sediment Input to Channels, as follows, including the addition of a new table showing urban stormwater load calculations:

5) Sediment Supply from Urban Stormwater Runoff

~~In developing an estimate for sediment supply from urban stormwater, we consider inputs from construction activities for structural development projects, highway maintenance activities by the California Department of Transportation, soil erosion at industrial facilities. We do not consider soil erosion from existing residential and/or commercial parcels, and/or urban parklands. Furthermore, considering the nature of construction activities,~~

~~we assume that construction site erosion dominates the total sediment supply from the urban stormwater runoff category. Therefore, we did not separately estimate loads from highway maintenance activities or industrial facilities. These inputs combined are assumed to be less than or equal to the total input associated with construction activities.~~

In estimating sediment supply from urban stormwater runoff, we considered inputs from construction activities, industrial facilities, highways and road maintenance activities, and wastewater treatment plants. In estimating sediment supply from construction activities for structural development projects, we have assumed a typical sediment delivery ratio of 50 percent (e.g., 50 percent of the eroded sediment is actually delivered to a stream channel). Using best professional judgment, we assume, on average, ground disturbance associated with construction is 100 acres per year and average soil erosion rate is 10 metric tons per acre from construction sites with Best Management Practices in place. We also assume on average between 1994 and 2004, ground disturbance associated with construction was 100 hectares or less per year (e.g., 40 acres per year), and average soil erosion rates were 250 metric tons per hectare (e.g., about 100 English tons per acre). Using these values, we calculate that average annual sediment supply to the Napa River or its tributaries from construction activities is approximately 2000 500 metric tons per year. Assuming the combined inputs from industrial facilities and highway maintenance are less than or equal to this amount, we estimate that average annual supply from urban stormwater runoff was less than or equal to 4000 metric tons per year between 1994 and 2004. Sediment supply from the remaining urban stormwater runoff dischargers is estimated based on applicable factors such as rainfall, runoff coefficients, suspended sediment concentrations, and the acreage in different land uses (i.e., industrial, highways). Table 7b presents the estimated sediment supply from point sources and provides the basis of the estimates.

Staff Report Table 7b is shown below:

Table 7b. Urban Stormwater Sediment Load to Napa River

<u>Point Source Category</u>	<u>Assumptions/Data</u>		<u>Estimated Mean Annual Delivery Rate (metric tons/yr)^a</u>
<u>Construction Stormwater</u>	<u>Ground disturbance: 100 acres</u> <u>Sediment delivery rate: 50%</u> <u>Average soil erosion rate: 10 metric tons/acre</u>		<u>500</u>
<u>Municipal Stormwater</u>	<u>Acreage of urban land use: 25,667 acres^b</u> <u>Runoff coefficient: 0.2 (typical urban coefficient is 0.35 (BASMAA, 1996; however Napa River watershed is highly vegetated with low directly-connected impervious area))</u> <u>Average rainfall: 30 inches/yr.</u> <u>TSS concentration: 100 mg/L^c</u> <u>Sediment delivery rate: 50%^d</u>		<u>800</u>
<u>Industrial Stormwater</u>	<u>Acreage of industrial land use: 1447 acres^b</u> <u>Average rainfall: 30 inches/yr.</u> <u>TSS concentration: 100 mg/L (EPA benchmark)</u> <u>Runoff coefficient: 1</u>		<u>500</u>
<u>Caltrans</u>	<u>Acreage of Caltrans roads: 1924 acres^b</u> <u>TSS concentration: 100 mg/L^e</u> <u>Runoff co-efficient: 1</u> <u>Average Rainfall: 30 inches/yr.</u>		<u>600</u>
<u>Wastewater Treatment Plant Discharges</u>	<u>Daily Flow (MG)</u>	<u>TSS limit (mg/L)</u>	
• <u>St. Helena</u>	<u>0.66</u>	<u>30</u>	<u>30</u>
• <u>Yountville/ CA Veteran's Home</u>	<u>0.62</u>	<u>30</u>	<u>30</u>
• <u>Calistoga</u>	<u>0.84</u>	<u>30</u>	<u>40</u>
a. <u>Rounded to nearest hundred, except for wastewater treatment plant discharges which are rounded to nearest ten.</u> b. <u>Source: GIS Data from ABAG (2000)</u> c. <u>WEF Manual of Practice No. 23/ASCE Manual No. 87, assumes median urban site (WEF, 1998)</u> d. <u>Assumes half of sediment is retained on land or removed via culverts, detention basins, etc.</u> e. <u>Approximation based on Storm Water Monitoring & Data Management Discharge Characterization Study Report (California Department of Transportation, 2003)</u>			

Staff Report Section 5.3, Allocations has been revised to clarify the wasteload allocations. Please see our response to comment 16.3, above.

To further clarify our strategy for achieving the wasteload allocations, Staff Report Section 6.5, Discussion of Possible Approaches to Achieve Allocations, has been revised as follows:

(6.5) Urban Stormwater Runoff

Urban Stormwater sediment sources include construction sites, industrial sites, municipal Stormwater conveyance systems, and state highways, and wastewater treatment plant discharges. These sources are all currently required to control sediment discharges and regulated by NPDES permits. Details of the State and Regional Water Board's programs to regulate urban Stormwater runoff can be found at <http://www.swrcb.ca.gov/stormwtr/index.html>.

As part of this TMDL, no new regulatory actions are proposed for these sources. The wasteload allocations, with the exception of wastewater treatment plant discharges, will be implemented and achieved via erosion and sedimentation controls (BMPs), required in existing permits. The erosion and sedimentation control (BMPs) requirements constitute water quality based effluent limitations. For wastewater treatment plant discharges, existing permitted effluent limits of 30 mg/L TSS are consistent with the wasteload allocations and will be maintained as the implementing mechanism. Effective regulation of these sources since 1994 has reduced loads and additional reductions may ~~no longer~~ not be necessary if compliance with existing permits and programs continues....

Comment no. 16.6: We recommend revision of the completion date for submitting reports of waste discharge to no later than 1–3 years following the effective date of the Basin Plan amendment.

We propose that erosion control plans and other required documents be submitted within five years of adoption of general waste discharge requirements and/or conditional waivers thereof. Considering the challenges of developing an effective education and outreach program that will need to reach hundreds of landowners in the watershed, and the need to increase local institutional capacity for the development and implementation of erosion control plans, we conclude that five years is an aggressive schedule.

Comment no. 16.7: With respect to Table 5.3 addressing fish passage restoration, it would be desirable to identify each of the 10 key tributaries to be addressed under this plan in the Basin Plan amendment.

We appreciate the opportunity to clarify our approach to removing significant structural impediments to salmonid migration in ten key steelhead tributaries. Five of the ten tributaries are identified in Table 5.3: Dry, Milliken, Redwood, Sulfur, and York creeks. The remaining five tributaries will be determined in consultation with stakeholders, resource agencies (NOAA Fisheries and California Department of Fish and Game), and environmental protection agencies. We intend to begin this consultation process in 2007.

Comment letter no. 17: Wine Institute (two letters)

Comment 17.1: The Wine Institute submitted two letters requesting recognition as a “third party” for the purpose of submitting progress reports on implementation of measures to reduce fine sediment discharge from vineyards, and enhance stream habitat conditions.

The *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (SWRCB, 2004) provides guidance regarding development of third party programs and key elements of an acceptable program to control nonpoint source pollution. We would appreciate receiving more information about the Wine Institute’s program for grape growers, and to discussing this and the State Water Board’s policy for control of nonpoint source pollution with Wine Institute staff. We are always open to recognizing effective third party programs, and hope to do so as part of the public process associated with adoption of conditional waivers of waste discharge requirements for grape growers.

PART II: STAFF RESPONSES TO ISSUES RAISED AT THE SEPTEMBER 13, 2006 TESTIMONY HEARING BEFORE THE WATER BOARD

Many of the comments raised in oral comments at the Water Board testimony hearing on September 13, 2006, are addressed in our responses to public comment letters. In addition, some comments were addressed by Water Board staff during the hearing; those responses are recorded in the hearing transcript. Below we respond to issues raised in oral testimony before the Water Board that are not addressed elsewhere in these documents.

In addition, we note for the record that the following commenters expressed support for the TMDL and Habitat Enhancement Plan, and for Board staff's approach:

- Napa County Supervisor Diane Dillon
- David Smith, TMDL team leader, U.S. EPA Region 9
- Joe Dillon, water quality coordinator, National Marine Fisheries Service Southwest Region (NOAA)
- Tim Stevens, California Department of Fish and Game, Central Coast Region

Board member Eliahu

Mr. Eliahu, Ms. Whyte, and Mr. Napolitano discussed a series of questions raised by Mr. Eliahu regarding calculations behind the TMDL.

Referencing the last paragraph on page 4 of the proposed Basin Plan amendment (and Table 2), Mr. Eilahu stated, "we have about 464 metric tons per square kilometer, which is according to my calculations, comes to be 7-to-8 centimeters per year [for the average rate of lowering of the land surface by erosion] in the area. Is that a cumulative? I mean this is sediment coming to the area, to the river and it's actually going, all of it, to the Bay. So if we continue taking away 7-to-8 centimeters per year we will go nowhere.

We estimate that the Napa River watershed is eroding (i.e., the land surface is lowering) at a rate that is much lower than the rate Board member Eliahu calculates. We arrive at a rate of 0.3 mm/yr.

We performed the following calculations to express average annual sediment delivery to the Napa River at Soda Creek during 1994-2004 (i.e., 464 metric tons per square kilometer per yr.) as an average lowering rate of the land surface. In calculating the sediment delivery rate, we assumed that the average bulk density (e.g., mass per unit volume) of eroded sediment is equal to 1.6 metric tons/m³/yr. Dividing the sediment

delivery rate by this value gives us a volumetric rate of sediment delivery per unit area per year:

$$464 \text{ metric tons/square kilometer/yr.} \div 1.6 \text{ metric tons/m}^3 = 290 \text{ m}^3/\text{square kilometer/year}$$

Dividing volume by area, we calculate the lowering rate as follows:

$$2.9 \times 10 \text{ m/yr.} \div 1 \times 10^6 \text{ m}^2 = 2.9 \times 10^{-4} \text{ m/yr} = \mathbf{0.3 \text{ mm/year.}}$$

Sandy Elles, Napa County Farm Bureau

“When you’re talking about road erosion, how do you know what’s coming off [roads] now, how do you measure it, and how does an individual farmer or rancher get to a point to know what they have to do?”

A number of fairly inexpensive field inventory procedures can provide estimates of sediment delivery to stream channels from road-related erosion. One example is the approach used by Pacific Watershed Associates to predict future sediment delivery from roads. A general description of this approach is provided in Weaver, Hagans, and Weppner (2006), which can be downloaded at http://www.dfg.ca.gov/nafwb/pubs/2006/manual_partX.pdf).

The Pacific Watershed Associates approach has been used throughout northern California and the Pacific Northwest, and in the Napa River watershed, including in the watersheds of Carneros, Dry, and Sulphur creeks (PWA, 2003 a, 2003b, and 2003c). This approach identifies sediment delivery sites, classifies them based on erosion process and/or road feature (e.g., stream crossing erosion, road surface erosion, landslides, etc.), and ranks them with regard to treatment priority based on the probability of future erosion, the amount of sediment that would be delivered (should the site erode), and the cost and effectiveness of potential treatments. We encourage the Farm Bureau to facilitate such analyses for property owners.

Is “the overall goal of achieving a 50 percent reduction [of sediment from sources related to human activity] achievable?”

We believe it is achievable, especially considering the strong foundation for erosion control and habitat enhancement already established in the Napa River watershed, including Napa County’s Conservation Regulations, the Napa Green Certification Program (over 7,000 acres of vineyards already have been certified by the Water Board and NOAA Fisheries as protective of water quality and steelhead and salmon), the

Rutherford DUST Napa River Restoration Project, and efforts of several tributary stewardships.

We acknowledge the significant challenges associated with developing the institutional capacity, as well as the political will, to conduct site inventories, identify sediment sources, prepare erosion control plans, and implement management practices to control human caused erosion over a large portion of the Napa River watershed. And we understand that additional resources are needed to expand existing education and outreach programs related to water quality and habitat protection, and to educate landowners about their responsibilities under the state's nonpoint source pollution control program, and the conditional waiver programs that the Water Board will be adopting.

Still, we are convinced that the environmental values embodied in the proposed Basin Plan amendment are shared by most Napa County residents. The five-year period we propose between adoption of the TMDL by USEPA, and compliance dates for submittal of erosion control plans should allow the municipalities and stakeholders in the watershed to develop plans and budgets to initiate the program. Also note that we propose an implementation period of approximately 20-years to achieve the recommended sediment reductions. It is our hope that through implementation of creative and cost effective approaches, the TMDL will be achieved at an earlier date.

Bernhard Krevet, Friends of the Napa River

Mr. Krevet elaborated on issues raised in Friends' comment letter (see Part I), stressing Friends' preference for voluntary actions by dischargers rather than regulatory requirements. He urged the Water Board to "avoid too rigid regulations and certainly litigation."

Consistent with State Water Board policy for control of nonpoint sources of pollution, we are required to regulate "all discharges of waste that could affect water quality" including the major sources identified in Tables 4.1-4.4 of the proposed Basin Plan amendment. Within this policy framework, we anticipate development of conditional waivers of waste discharge requirements as a primary vehicle for achieving compliance. As compared to a direct permitting program, a waiver program may actually reduce required submittals and fees. We also expect voluntary water quality and fisheries enhancement programs like Napa Green to provide vehicles for achieving sediment reduction and habitat enhancement objectives.

John Stephens, Environmental Defense for the Earth Now (EDEN)

“The sediment TMDL relies on waivers from regulation throughout the document. It has not emphasized regulation. It relies on the county conservation regs to provide guidance and regulation. It does not mention at all the need for the city and the county to coordinate their setbacks to have a common setback for the same stream.”

Mr. Stephens may not be familiar with the term “waiver” as used by the State Water Board and explained in its Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (“Nonpoint Source Policy”). Conditions of a waiver of waste discharge requirements (WDRs) are in fact enforceable. The following quotation from the Policy explains:

Waivers of Waste Discharge Requirements

The requirements for a discharger to submit a Report of Waste Discharge (RoWD) or for a RWQCB to issue Waste Discharge Requirements (WDRs) may be waived by the RWQCB or SWRCB for a specific discharge or a specific type of discharge if the SWRCB or RWQCB determines, after a public meeting, that the waiver is consistent with any applicable State or regional water quality control plan and is in the public interest (CWC Section 13269(a)(1)). All waivers are conditional and may be terminated at any time. Except for waivers for discharges that the SWRCB or a RWQCB determines do not pose a significant threat to water quality, waiver conditions must include, but need not be limited to, individual, group or watershed-based monitoring. Waivers may not exceed five years in duration, but may be renewed. Prior to renewing a waiver, the SWRCB or RWQCB must determine whether the discharge in question should be subject to general or individual WDRs.

CWC section 13269(e) provides that “the regional boards and the state board shall require compliance with the conditions pursuant to which waivers are granted....” Therefore, even where the RWQCBs decide to waive the requirement to submit a RoWD for general WDRs, the RWQCBs are encouraged to have an enrollment process for coverage under the waiver of WDRs so that the RWQCBs can identify the dischargers who are required to comply with the general waiver of WDRs. Although the RWQCBs retain their prosecutorial discretion to decide how to ensure compliance with their conditional waivers, the language of section 13269(e), makes it clear that the legislature intends that the RWQCBs allocate some of their resources to ensuring that dischargers are in compliance. Following SWRCB adoption of a fee schedule, RWQCBs are authorized to collect annual administrative fees to establish and implement waivers of WDRs (CWC Section 13269(a)(4)(A)).

There are many different ways for the RWQCBs to ensure compliance. In the event of noncompliance, a RWQCB could rescind a waiver, or terminate its applicability to individual dischargers, and issue WDRs in its place. If the waiver leaves significant discretion with the discharger to determine how to comply with the waiver's conditions, the RWQCB could adopt a new waiver that is more directive in terms of the actions that the dischargers must take in order to comply with the waiver. In order to be enforceable, waiver conditions should be clearly specified.

As for coordination on setbacks between the City of Napa and the County, we fully expect that as Board staff works with both of these entities and the countywide nonpoint source program in the adaptive implementation phase of this TMDL, we will consider and recommend specific regulatory changes that will have the potential to reduce sediment to streams, creeks, and the Napa River.

“I would urge that the Water Board provide more funding and more staff for this TMDL development and implementation effort.”

We agree that additional staff and contract resources would be very helpful. Staffing will continue to be prioritized based on region-wide water quality threats and programmatic requirements. We view the Napa River watershed as a high priority and recognize the significance of its aquatic resources and will do our best to devote as much staff time as possible to this watershed.

Kenneth Manfree

Mr. Manfree asked the Water Board to review project documents for inconsistencies.

We assert that our documents are not inconsistent. In addition to extensive internal review by Water Board scientists, Professor William Dietrich, a principal investigator for the *LIDAR* mapping project, has reiterated his support for the conclusions that we presented in the *Napa River Sediment TMDL* report (Comment Letter No. 6) after careful reviewed of the study plan, interim products, results, and conclusions of the *Napa River Basin Limiting Factors Analysis* and the *Napa River Sediment TMDL*.).

With regard to the benthic macro-invertebrate study Mr. Manfree mentioned in his testimony, we have indicated our overall support for this monitoring program in written comments that we provided on the draft report, although we also have stated concerns regarding some of the conclusions presented in the draft report/presentation you cite . We also have stated in previous public meetings that complimentary data regarding

biomass (e.g., mass per unit area) of benthic macro-invertebrates consumed by juvenile steelhead might be of greater value in attempting to evaluate relationships between water quality and juvenile steelhead growth and survival than data alone regarding the diversity of species.

Staff estimated road length within the watershed by comparing a portion of the watershed where we had complete mapping of road networks (in the watersheds of Carneros, Dry, and Sulphur creeks) to other areas with less comprehensive mapping coverage. In the three tributary watersheds, the public road network accounts for approximately 1/3 of the total length of roads in the three tributaries. Based on the assumption that these watersheds are representative of the whole, we multiplied the length in the County road database by three to obtain an estimate of road length elsewhere in the watershed. Although we agree that it would be better to have complete mapping throughout the watershed, given the available dataset, we assert that the method we used is reasonable.

Chris Malan, manager, Living Rivers Council

Ms. Malan explained points made in the Council's comment letter (see Part I). Regarding unpermitted dams and diversions in the Napa River watershed, she stated that "the North Coast Water Rights Working Group has formed to try to make recommendations to your Board on how to deal with illegal diversions....We think it's really important that the agencies coordinate with local government on trying to prevent illegal diversions in projects as they are beginning."

We agree. We are closely coordinating with the State Water Board in the development of the North Coast Instream Flow Policy.

Ivan Karnezis, Caltrans Office of Stormwater Policy, TMDLs

Mr. Karnezis asked for clarification of Caltrans' responsibility for sediment reductions.

Ms. Whyte replied that Water Board staff will be meeting with Caltrans and other dischargers to explain the allocation scheme in the TMDL, and the likelihood that implementations of Caltrans' best management practices will be sufficient for compliance.

**Laurel Marcus, executive director, California Land Stewardship Institute
(Napa Green and Fish Friendly Farming)**

Ms Marcus described the mission, protocols, and membership of Napa Green.

PART III: STAFF INITIATED CHANGES

III.1 The following text, now included in Staff Report Chapter 7, demonstrates the Water Board's compliance with California peer review requirements. Staff has made additional revisions throughout the Staff Report in response to recommendations of the project's two peer reviewers.

7.4 Gov. Code §. 57004 Peer Review

We sent the staff report and proposed basin plan amendment to two scientists for peer review. The two peer reviewers are: 1) Dr. Robert Naiman, a river ecologist at the University of Washington, who has special expertise in stream-and-riparian ecosystem process interactions, and dynamics; and 2) Dr. William Rahmeyer, a civil engineer at the Utah State University, who specializes in fluid mechanics and hydraulics applied to river and reservoir management issues. The peer reviewers' responses confirmed that the scientific portion of the proposed TMDL and implementation plan are based on sound scientific knowledge, methods, and practices, thus satisfying Gov. Code § 57004. Actions to implement the habitat enhancement plan are recommended, not required, and therefore not part of the rule making process subject to scientific peer review requirements. A summary of the peer review comments and our responses is provided below.

In his introductory remarks, Dr. Naiman wrote:

As a whole, much of the information in the documents is well researched, the general conclusions founded on solid facts, the rationale for needing to reduce sediment loads justified in light of salmon habitat, and some of the recommended approaches are reasonable. The authors have done a good job in addressing and articulating a highly complicated issue that has implications going far outside the perennially wetted channels. I have visited the Napa River and its tributaries several times, and concur that sediment loads and channel incision are too severe to adequately support steelhead and Chinook salmon for the long-term. Spawning and rearing habitat, as well as general environmental conditions, are not optimal for these and other native aquatic species. Recommendations contained in the Technical Report need to be adopted – but are only a start – if the river network is to re-attain a reasonable ecological vitality. (SFBRWQCB 2007)

While supporting the basis for the proposed TMDL for sediment, Dr. Naiman also commented that while the proposed habitat enhancement plan provides a foundation for restoring steelhead and Chinook populations, in his opinion it does not go far enough. In response we

conducted additional analyses as related to the scope of the project and available resources and data, and identify additional monitoring and studies needed to further our understanding of fish population dynamics. In addition, we provided additional information that was lacking in the draft staff report regarding large-scale stream and riparian restoration projects that are now in-progress or being planned in the Napa River watershed (e.g., restoration projects in the Rutherford-to-Oakville and Oakville-to-Oak Knoll reaches of the Napa River, and the Napa Green Certification Program).

Dr. Naiman also requested that we provide additional information and/or clarifications regarding various aspects of the problem statement, methods used in the source analysis, and the relationship between spawning gravel permeability and sedimentation. In response, we have provided additional information and clarification in the Staff Report.

Dr. Rahmeyer provided more general comments focused on the details of methods used to develop the source analysis, and prompted us to provide additional information regarding current channel conditions and mechanisms for channel incision. During the peer review period, he requested additional information regarding our methods, after which he stated in his written comments that:

My initial concern for both the technical report and the enhancement plan is that it is not clear where the supporting data, results, field measurements, and documentation can be found. Supporting documentation and methodology was later provided that must be appended to and referenced by the 2/17/06 Technical Report. The report does need additional explanation and comments about the appended supporting documentation. (SFBRWQCB 2007)

In response, we included additional methodological details in this Staff Report, referencing the more detailed methodology we provided to Dr. Rahmeyer.

All peer review comments and our specific responses are contained in a document entitled “Sediment in the Napa River Watershed: Detailed Responses to Peer Review Comments.”

III. 2 Numbering of the sections of Chapter 7 beginning with “Economic Considerations” have been revised to accommodate the addition of the new Section 7.4.

III.3 Staff propose the following clarifying change to the Basin Plan amendment Problem Statement:

2. Channel incision has greatly reduced the quantity and quality of spawning and rearing habitat for Chinook salmon in Napa River watershed. Habitat losses as a result of incision exert a significant negative influence on freshwater growth and survival of juvenile salmon, and therefore, on the number of Chinook salmon that ultimately return to spawn.

Channel incision, the progressive lowering over time of streambed elevation as a result of net erosion, has lowered the streambed of the mainstem of the Napa River by more than two meters since the start of the current episode of incision, which began sometime after 1965. As a result, habitat is being degraded. The channel has become isolated from its flood plain and there has been a large reduction in the size and frequency of riffles, gravel bars, side channels, and sloughs. These habitats provide essential spawning and juvenile rearing habitat for Chinook salmon. Human activities that have contributed to channel incision in the River, including (but not necessarily limited to) levee building, construction of large tributary dams, development projects that have increased peak runoff during storms, straightening of some mainstem channel reaches, filling of side channels, historical gravel mining, dredging to reduce flood risk, and intensive removal of large woody debris.

III.4 Staff propose the following clarifying change to the Basin Plan amendment Source Analysis:

Sources

Field inventories conducted throughout the watershed ~~between 1994 and 2004~~ provide credible estimates of the rates and sizes of sediment delivered to Napa River watershed channels ~~during the decade between 1994 and 2004.~~

III.5 The following Basin Plan amendment text and Table 4.0 have been revised as follows to clarify changes made in relation to point and nonpoint sources:

The state's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires regulation of nonpoint source discharges using the Water Board's administrative permitting authorities, including waste discharge requirements (WDRs), waiver of WDRs, Basin Plan Discharge Prohibitions, or some combination of these. Consistent with this policy, Tables 4.1 – 4.4 Implementation Measures for Nonpoint Sources specifies actions and performance standards by nonpoint source category, as needed to achieve TMDL sediment targets and allocations in Napa River watershed. The Water Board will consider adopting conditions for waiving WDRs that apply to the nonpoint sources (vineyards, grazing, roads, etc.) listed in Tables 4.1 – 4.4.

Table 4.0 TMDL Implementation measures for Sediment Discharges Associated with Urban Stormwater Runoff and Wastewater Discharges

Source Category	Actions	Implementing Parties
Urban Stormwater Runoff and wastewater discharges	Comply with applicable NPDES permits	Napa County, City of Napa, Town of Yountville, City of St. Helena, City of Calistoga, City of American Canyon, State of California, Department of Transportation, <u>California Veterans' Home</u> , owners or operators of industrial facilities and construction projects > 1 acre

III.6 Staff propose the following clarifying change to Table 1 of the Basin Plan amendment:

Table 1. TMDL sediment targets for the Napa River and its Tributaries

Spawning gravel permeability	Median value $\geq 7000 \text{ cm/hr}^a$
Streambed scour	Mean depth of scour $\leq 15 \text{ cm}^b$
^a Target applies to all potential spawning sites for steelhead and salmon in the Napa River and its tributaries, excluding those upstream of municipal water supply reservoirs. ^b Target applies to the response of the streambed to peak flows less than the annual (one-year) flood <u>bankfull event</u> at all potential spawning sites for salmon in gravel-bedded reaches of: 1) mainstem Napa River; and 2) alluvial reaches of tributaries where streambed slope is between 0.001 and 0.02. Potential spawning sites can be identified based on <u>any</u> of the following: 1) dominant substrate size in the streambed surface layer is between 8 and 128 mm; 2) minimum surface area of gravel deposit is 0.2 square meters in tributaries and 1.0 square meter in mainstem Napa River; and or 3) located within mainstem Napa River at a riffle head, pool tail, and/or pool margin or in tributary reaches where streambed slope < 0.03, or in tributary reaches where streambed slope > 0.03 in pool tails, backwater pools, and/or in gravel deposits associated with flow obstructions (e.g., woody debris, boulders, banks, etc.).	

III.7 In the Agricultural Water Quality Control Program Costs section of the Basin Plan amendment, we have made the following grammatical correction:

Considering potential benefits to the public in terms of ecosystem functions, aesthetics, recreation, and water quality, it is anticipated that at least 75 percent of the cost of these actions will be paid for with public funds ~~and~~. Therefore, the total cost to agricultural businesses associated with efforts to reduce sediment supply and enhance habitat in Napa River is \$800,000 to \$1.7 million per year.

REVISIONS TO THE REGULATORY ANALYSES

The following revisions to Staff Report Chapter 7, Regulatory Analyses, are in response to comments from

- City of Calistoga
- City of Napa
- County of Napa
- Law Offices of Lester F. Hardy

Changes to the Regulatory Analyses are intended to enhance and clarify the description of the Water Board's Basin Plan amendment "project" and further explain our basis for concluding that the project will not have significant impacts on the environment. None of the changes to the Regulatory Analyses results in a finding of a potentially significant impact.

The following explanatory sections, following the Environmental Checklist, have been revised.

Project Description

III. Air Quality

IV. Biological Resources

V. Cultural Resources

VI. Geology and Soils

VIII. Hydrology and Water Quality

XI. Noise

XVII. Mandatory Findings of Significance

For readers' convenience we reproduce the Regulatory Analyses chapter below, with changes shown in underline/strikeout.

CHAPTER 7: REGULATORY ANALYSES

7.1 Overview

~~The Administrative Procedures Act specifies legal requirements associated with adoption or modification of regulations by the State of California. Because required~~
This section includes the State of California. Because required
regulatory analyses for the proposed Basin Plan amendment (BPA) would add regulatory
provisions to the Basin Plan, in order to adopt these changes, the Water Board must: a) complete
an environmental checklist pursuant to the California Environmental Quality Act (CEQA); b)
consider reasonable alternatives to the proposal; and c) consider economic factors relating to
compliance with new regulatory requirements contained in the proposed amendment.
Specifically, set forth below are the required analyses of the Basin Plan amendment under the
California Environmental Quality Act (CEQA); economic considerations including agricultural
water quality program costs; and clarification of regulatory authorities germane to this project.

7.2 Environmental Checklist

~~CEQA requires agencies to review~~ Under the potential Board's certified regulatory program for their actions to result in adverse environmental basin planning, the Board must satisfy the substantive requirements of Cal. Code of Regs., title 23, sec. 3777(a), which requires a written report that includes a description of the proposed activity, an alternatives analysis, and an identification of mitigation measures to minimize any significant adverse impacts. ~~CEQA further~~ Section 3777(a) also requires ~~agencies~~ the Water Board to complete an environmental checklist as part of its substitute environmental documents. Additionally, the Board must comply with Public Resource Code sec. 21159 when adopting performance standards such as those in the proposed Basin Plan amendment. Section 21159 requires the environmental analysis to ~~adopt~~ feasible measures to mitigate potentially significant impacts. ~~include:~~ (1) the reasonably foreseeable environmental impacts of the method of compliance; (2) the reasonably foreseeable mitigation measures; and (3) the reasonably foreseeable alternative means of compliance with a rule or regulation. The analysis must take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites. Section 21159 further states that Board is not required to engage in speculation or conjecture or conduct a project-level environmental analysis.

This section contains the environmental checklist for the proposed Basin Plan amendment, and includes the required analyses mentioned above. The explanation following the checklist provides details concerning the environmental impact assessment. Based on this analysis, Water Board staff concludes that adoption of the proposed Basin Plan amendment would not cause any significant adverse environmental impacts.

ENVIRONMENTAL CHECKLIST

- | | |
|---|--|
| 1. Project Title: | Napa River Sediment Reduction and Habitat Enhancement Basin Plan amendment |
| 2. Lead Agency Name and Address: | California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612 |
| 3. Contact Person and Phone Number: | Mike Napolitano
(510) 622-2397 |
| 4. Project Location: | Napa River Watershed, Napa County and Sonoma County, California |
| 5. Project Sponsor's Name and Address: | California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612 |

6. General Plan Designation: Not Applicable

7. Zoning: Not Applicable

8. Description of Project:

The project is a proposed Basin Plan amendment that would establish a sediment TMDL for Napa River and an implementation plan to achieve the TMDL and related habitat enhancement goals. The project would involve numerous actions to reduce fine sediment inputs to Napa River and its tributaries, and related actions to protect or enhance baseflow, enhance habitat access for salmon and steelhead, and to enhance stream-riparian habitat complexity and stream temperatures. Details are provided in the ~~attached~~ explanation following the Checklist, below.

9. Surrounding Land Uses and Setting:

The proposed Basin Plan amendment would affect the entire Napa River watershed, except for land areas upstream of municipal water supply reservoirs. Implementation would involve specific land and water management actions throughout the watershed. Napa River watershed land uses include a mix of open space, agricultural, commercial, residential, and municipal uses.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

The California State Water Resources Control Board, the California Office of Administrative Law, and the U.S. Environmental Protection Agency must approve the proposed Basin Plan amendment.

ENVIRONMENTAL IMPACTS:

Issues:

<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
---	--	---	----------------------

I. AESTHETICS -- Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☐ | ☒ |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☐ | ☒ |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☐ | ☐ | ☒ |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ☐ | ☒ |

ENVIRONMENTAL IMPACTS:

Issues:

<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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II. AGRICULTURE RESOURCES -- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. **Would the project:**

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | ☐ | ☐ | ☒ | ☐ |

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☐ | ☒ |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☐ | ☒ | ☐ |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which | | | | |

ENVIRONMENTAL IMPACTS:

Issues:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

IV. BIOLOGICAL RESOURCES -- Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐

ENVIRONMENTAL IMPACTS:

Issues:

<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
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V. CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
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b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
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c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
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d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
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VI. GEOLOGY AND SOILS -- Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒

ii) Strong seismic ground shaking?	☐	☐	☐	☒
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iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
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ENVIRONMENTAL IMPACTS:

Issues:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☒

ENVIRONMENTAL IMPACTS:

Issues:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

**VIII. HYDROLOGY AND WATER QUALITY --
Would the project:**

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒

Napa River Watershed Sediment TMDL and Habitat Enhancement Plan

ENVIRONMENTAL IMPACTS:

Issues:

	<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

IX. LAND USE AND PLANNING -- Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with				

ENVIRONMENTAL IMPACTS:

Issues:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

X. MINERAL RESOURCES -- Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

XI. NOISE -- Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been				

ENVIRONMENTAL IMPACTS:

Issues:

<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
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adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

☐	☐	☐	☒
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- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

☐	☐	☐	☒
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XII. POPULATION AND HOUSING -- Would the project:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

☐	☐	☐	☒
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☐	☐	☐	☒
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☐	☐	☐	☒
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XIII. PUBLIC SERVICES --

- a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

☐	☐	☐	☒
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Police protection?

☐	☐	☐	☒
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Schools?

☐	☐	☐	☒
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ENVIRONMENTAL IMPACTS:

Issues:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XIV. RECREATION --

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

XV. TRANSPORTATION / TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☐	☒

ENVIRONMENTAL IMPACTS:

Issues:

<u>Potentially Significant Impact</u>	<u>Less Than Significant With Mitigation Incorporation</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
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- g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

☐	☐	☐	☒
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**XVI. UTILITIES AND SERVICE SYSTEMS --
Would the project:**

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- g) Comply with federal, state, and local statutes and regulations related to solid waste?

☐	☐	☐	☒
☐	☐	☐	☒
☐	☐	☐	☒
☐	☐	☐	☒
☐	☐	☐	☒
☐	☐	☐	☒
☐	☐	☐	☒

ENVIRONMENTAL IMPACTS:

Issues:

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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XVII. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☐ | ☐ | ☒ |
| b) Does the project have impacts that are individually limited, but cumulative considerable? (“Cumulative considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☐ | ☐ | ☐ | ☒ |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ☐ | ☒ |

EXPLANATION

Project Description

The proposed project is a Basin Plan amendment that would establish a Total Maximum Daily Load (TMDL) for sediment in the Napa River and an implementation plan to achieve the TMDL and related habitat enhancement goals. The goal of the Basin Plan amendment is to improve environmental conditions by addressing sediment discharges and improving salmonid and steelhead habitat. The Basin Plan amendment would include targets for fine sediment (primarily sands) concentrations in the bed of the Napa River that are expressed as numeric criteria for spawning gravel permeability and redd scour depth, and establish sediment allocations necessary to achieve the targets. The Basin Plan amendment implementation plan would require actions to achieve the targets and allocations for sediment, and numerous actions to enhance other habitat attributes needed to conserve and enhance steelhead and salmon populations. The proposed Basin Plan amendment would affect all segments of Napa River and its tributaries located downstream of municipal water supply reservoirs.

The proposed Basin Plan amendment contains sediment allocations ~~are measures for~~ dischargers and discharge categories. As the Water Board is limited in prescribing the manner of performance, compliance with state law requirements, the Basin Plan amendment does not prescribe specific projects through which dischargers and discharge categories are to meet the sediment allocations.

The implementation plan ~~outlines the San Francisco Bay Regional Water Quality Control Board's (Water Board's) approach to meeting these measures of performance. The plan describes~~ would require actions the Water Board would take and how the Water Board would compel, as necessary, other entities to do their parts to reduce fine sediment supply to Napa River, and to sediment discharges associated with key sources: vineyards; grazing lands; rural lands; and parks and open space and/or municipal public works. Required actions by landowners include 1) submittal of reports of waste discharge (ROWDs) and 2) compliance with waste discharge requirements (WDRs) or WDR waiver conditions.

The proposed Basin Plan amendment also recommends actions that will enhance related stream-riparian ~~other~~ habitat attributes, as needed to conserve steelhead, Chinook necessary for the conservation and growth of steelhead and salmon, and other native populations by increasing habitat complexity, enhancing baseflows, restoring fish passage, and aquatic wildlife species. The ~~lowering water temperature in critical areas.~~

While the Water Board would not directly undertake any actions that could physically change the environment, but adopting ~~adoption of~~ the proposed Basin Plan amendment could indirectly ~~would~~ result in other entities (e.g., cities, counties, and special districts) undertaking projects to satisfy requirements derived from the Basin Plan Amendment. These projects could physically ~~future actions by landowners, municipalities and other agencies to comply with the requirements of the Basin Plan amendment and that may result in a physical change to the environment.~~ The environmental impacts of such physical changes are evaluated below, to the extent that they are reasonably foreseeable. Changes that are speculative in nature do not require environmental review.

Until the parties that must comply with requirements derived from the Basin Plan amendment propose specific projects, many physical changes cannot be anticipated. These projects would be subject to environmental review under the California Environmental Quality Act (CEQA), and CEQA compliance would be the responsibility of the lead agency for each project. The environmental reviews would identify any potentially significant adverse environmental impacts of the specific proposals, along with appropriate mitigation measures. Until such projects are proposed, however, identifying specific impacts and mitigation measures would require inappropriate speculation. Moreover, any mitigation deemed necessary by That said, it is reasonably foreseeable that the lead agencies for those projects would not be within following activities may take place to comply with the jurisdiction of the Water Board to require.

~~DIRECT AND INDIRECT PHYSICAL CHANGES~~

Table 10 summarizes the actions that could conceivably be undertaken if the proposed Basin Plan amendment were adopted, and includes the rationale for including or excluding them in this environmental review. As shown in the table, the physical changes that require evaluation are those associated with: (1) minor construction, (2) earthmoving, (3) enhancement of vegetation and woody debris in riparian corridors and stream channels; (4) enhancement of baseflow in streams during the dry season; and (5) installation and maintenance of stream habitat enhancement structures; and (6) waste handling and disposal². Although these activities are reasonably foreseeable methods of compliance, the implementation plan does not specify the nature of these actions. Therefore, this analysis considers these actions in general programmatic terms. To illustrate the possible nature of these activities, some examples are described following the table.

² That could be discovered during planning or implementation of erosion control and/or habitat enhancement projects.

TABLE 10: Implementation Actions Subject to Environmental Review Reasonably Foreseeable Compliance Projects

Possible Actions	Environmental Change Subject to Review
Road-erosion control and prevention projects	Earthmoving and/or minor construction
Gully and landslide erosion control and prevention	Earthmoving, minor construction, biotechnical engineering, and/or enhanced vegetation cover
Surface erosion control in vineyards, and rangelands	Earthmoving, minor construction, biotechnical engineering, and/or enhanced vegetation cover
Stream habitat enhancement actions	Earthmoving, minor construction, biotechnical engineering, enhanced vegetation cover, increase in amount of large woody debris in channels, and/or waste handling and disposal
Riparian habitat enhancement actions	Enhanced vegetation cover, and/or waste handling and disposal
Increase in baseflow in stream channels	Increased reservoir releases, discharge of tertiary treated wastewater, conjunctive groundwater management. <u>Installation of water-level gages, and potential reductions in peak rates of surface water withdrawals associated with riparian or appropriative water rights.</u>
Fish passage enhancement	Earthmoving, minor construction, biotechnical engineering, and/or increases in baseflow in stream.

- **Minor construction.** Basin Plan amendment-related construction projects would generally be small. Examples may include: a) *detention basins* to capture sediment and/or reduce surface runoff during storms; b) *bio-swales* to deposit sediment entrained in surface runoff; c) *retrofit or replacement of road crossings* over stream channels to increase capacity to convey peak runoff and/or to provide suitable conditions for fish migration; d) *spillways, bypass channels, and/or energy dissipaters immediately downstream of dams* to control or prevent channel erosion; e) *water bars, cross-drains, and/or surfacing of roads* to reduce road-surface and/or inboard ditch erosion; f) *fish ladders or step-pool structures* (e.g., boulder weirs) in channels to provide suitable conditions for fish migration; g) *engineered log jams* to enhance stream habitat complexity; and/or h) *minor fencing* adjacent to some stream reaches or actively eroding gullies in rangelands to accelerate re-establishment of native scrub and tree cover (as may be needed to reduce erosion rates).
- **Earthmoving operations.** Approval of the Basin Plan amendment would result in earthmoving to reduce fine sediment supply to Napa River and its tributaries. For example, earthmoving to reduce road-related erosion may involve re-contouring the surface of some dirt roads to disperse concentrated runoff, terracing ~~cut-steep slopes~~ and banks to reduce erosion rates, and/or reconstruction or relocation of road segments to avoid landslides. ~~Extensive earthmoving~~ Earthmoving may also be employed to reduce erosion rates and enhance stream habitat complexity in the Napa

River and lower reaches of its larger tributaries. Also, some actions undertaken to stabilize gullies or landslides, and/or to enhance stream channel habitat may involve earthmoving.

- ***Enhancement of vegetation and woody debris in riparian corridors and stream channels.*** Approval of the Basin Plan amendment may contribute to an increase in the amount of vegetation and large woody debris in stream channels. This could take place if new public agency performance standards are adopted to protect ecologically significant large woody debris, and if the vineyard acreage (and adjacent land under same ownership) certified by the Napa Green program³ increases.
- ***Enhancement of baseflow in stream channels.*** The Basin Plan amendment recognizes actions to protect or enhance baseflow during the early spring through late fall period (e.g., mid-March through mid-October), as needed to support salmonid migration and rearing. These changes include installation of water-level gages, and potential reductions in peak rates of surface water withdrawals associated with riparian or appropriative water rights as a result of enhanced water use efficiency and/or reduction in irrigation block sizes and/or staggering of irrigation events. Resultant potential increases in baseflow also may contribute to an increase in the amount of riparian vegetation on gravel bars, flood plains, and lower channel banks in some stream reaches.
- ***Installation of stream habitat structures.*** Adoption could lead to an increase in the number of stream habitat structures installed in Napa River and lower reaches of its tributaries. Example habitat enhancement structures include log jams, step-pools, willow waddles, log crib walls, and rock work.
- ***Waste Handling and Disposal.*** Contaminated soil could be discovered during earthmoving or other activities associated with erosion control, and/or habitat enhancement. In some cases, disposal could be arranged on site (e.g., constructing a containment facility). In others, soil or other contaminated materials could be sent for disposal. While implementation projects could reasonably generate contaminated soil for disposal, possible amounts are unknown. This waste would, however, be generated only on a temporary basis.

~~Above examples are not intended to be exhaustive or exclusive. As and parties would be required to comply with specific implementation proposals are developed and proposed, lead agencies would undertake environmental review handling, transporting, and identify specific environmental impacts and appropriate mitigation measures disposal requirements. To the extent such hazardous waste is removed from the environment and disposed of in appropriate waste management units, it would result in an environmental benefit.~~

~~Changes Likely With or Without the Basin Plan Amendment~~

³ Napa Green Certification includes actions to protect or re-establish native vegetation cover within riparian corridors averaging four-times the width of the bankfull channel.

~~The implementation plan recognizes some~~ These examples are not intended to be exhaustive or exclusive. Several conceivable actions that ~~will occur with or without the proposed Basin Plan amendment. Because these actions do not~~ could be taken as a result from adoption of the Basin Plan amendment, ~~environmental review is not included in this analysis. For example, actions to enhance fish passage are likely to occur with or without adoption, so they are not examined. Also, actions required under NPDES municipal stormwater and NPDES construction general permits to control pollutant discharges (including sediment) are already in effect and not dependent on adoption of the Basin Plan amendment. Therefore, these actions are not considered in this analysis.~~

CHANGES TOO SPECULATIVE TO EVALUATE

Several conceivable actions that could be taken as a result of the Basin Plan Amendment require speculation, and therefore, cannot be evaluated. For example, although the implementation plan recognizes planning efforts ~~between~~ among local, state, and federal government agencies to enhance water supply reliability and instream flows for salmonids, actual outcomes and specific actions resulting from the proposed partnership are too speculative to determine at this time. Also, as discussed above, even in cases where some physical changes are foreseeable, the exact nature of these changes is often speculative pending specific project proposals that will be ultimately put forth by those subject to requirements derived from the Basin Plan amendment.

Environmental Analysis

The proposed Basin Plan amendment does not define the specific actions that responsible parties would take to comply with requirements derived from the Basin Plan amendment. As discussed above, physical changes resulting from the Basin Plan amendment are foreseeable, but the attributes of specific implementation actions (e.g., location, extent, etc.) are unknown, pending responsible parties proposing actions to comply with Basin Plan amendment requirements. ~~CEQA requires lead agencies (in many cases local municipal government agencies) to review the potential for specific actions to result in adverse environmental impacts. CEQA further requires lead agencies to adopt feasible measures to mitigate potentially significant impacts. Therefore, the analysis below assumes that lead agencies would adopt mitigation measures necessary to address potentially significant impacts as long as appropriate measures are readily available. As explained below, mitigation measures are readily available to address all the foreseeable impacts of the Basin Plan amendment, including possible local agency actions to the extent that they can be anticipated. Therefore, the potential impacts of the proposed Basin Plan Amendment would be less than significant.~~

Therefore, this analysis considers the above-mentioned reasonably foreseeable methods of compliance with the Basin Plan amendment in general programmatic terms and concludes that the Basin Plan amendment will not have significant environmental impacts. Specific compliance projects, when they are developed, will be subject to review and/or approval by the Water Board, which will, as part of administering its program responsibilities, either disapprove projects with significant and unacceptable environmental impacts (e.g., instream work with too many impacts) or require implementation of routine mitigation measures (e.g., best construction management practices) to ensure that environmental impacts remain at or are reduced to less-than-

significant levels. Additionally, there are existing performance standards (e.g., air standards and noise ordinances) with which these compliance projects have to comply to keep impacts at less-than-significant levels. In sum, the regulatory programs, criteria, and requirements currently in place provide adequate assurances that impacts from the Basin Plan amendment will be less-than-significant. An explanation for each box checked on the environmental checklist is provided below.

I. AESTHETICS

- a-d) Any physical changes to the aesthetic environment as a result of the Basin Plan amendment would be small in scale. The Basin Plan amendment would not substantially affect any scenic resource or vista, or degrade the existing visual character or quality of any site or its surroundings. It would not create any new source of light or glare.

II. AGRICULTURE RESOURCES

- a-c) Adoption of the Basin Plan amendment could increase the level of landowner participation in cooperative efforts to enhance channel stability and stream-riparian habitat conditions in Napa River and its tributaries (e.g., Rutherford, Napa Green Certification, etc.), which could in turn result in a reduction in the amount of land cultivated near channels (e.g., voluntary increases in setbacks of agriculture from channels). However, these actions would not: a) ~~change~~ reduce the agricultural character/fertility of the watershed soils in areas designated as Prime, Unique, or Farmland of Statewide Importance; b) ~~result in conversion to non-agricultural uses;~~ and/or c) ~~conflict with existing zoning or Williamson Act contracts. Expansion of riparian corridors also may reduce some farm management costs including channel maintenance, levee repairs, bank stabilization, and property damage during floods. Restoration of native riparian vegetation species and/or increases in setback distance also may reduce incidence and severity of Pierce's Disease. Similarly, riparian corridor enhancement should yield significant aesthetic, ecological, and other pollutant reduction benefits (e.g., lower pathogen and nutrient loads).~~ result in conversion to non-agricultural uses.

III. AIR QUALITY

- a) Because the Basin Plan amendment would not cause any significant changes in population or employment, it would not generate ongoing traffic-related emissions. It would also not involve the construction of any permanent emissions sources. For these reasons, no permanent change in air emissions would occur, and the Basin Plan amendment would not conflict with applicable air quality plans.

- b) The Basin Plan amendment would not “violate any air quality standard or contribute substantially to an existing or project air quality standard.” Nor would it involve the construction of any permanent emissions sources or generate ongoing traffic-related emissions. Construction that would occur as a result of Basin Plan amendment implementation, including such as earthmoving operations, to reduce sediment discharges from eroding areas like roads and gullies would be of short-term duration and would likely involve discrete, small-scale projects as opposed to massive earthmoving activities. Fine particulate matter (PM₁₀) is the pollutant of greatest concern with respect to construction. PM₁₀ emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Given the limited duration and scale of reasonably foreseeable construction activities to comply with the Basin Plan amendment, PM₁₀ standards, however, would not be “substantially” violated, if at all. Additionally, if specific construction projects were proposed to comply with requirements derived from the proposed Basin Plan Amendment, local agencies would require any necessary mitigation through their environmental reviews. The amendment, such projects would have to comply with the Bay Area Air Quality Management District’s (BAAQMD) requirements with respect to the operation of portable equipment. Moreover, BAAQMD has identified readily available measures to control construction-related air quality emissions (BAAQMD 1999) that are routinely employed at most construction sites. These measures include watering active construction areas; covering trucks hauling soil; and applying water or applying soil stabilizers on unpaved areas. Lead agencies would ensure that appropriate emissions control measures are implemented. Therefore, in consideration of all of the foregoing, the Basin Plan amendment would not violate any air quality standard or contribute substantially to any air quality violation, and its temporary construction-related air quality impacts would be less-than-significant.
- c) Because the Basin Plan amendment would not generate ongoing traffic-related emissions or involve the construction of any permanent emissions sources, it would not ~~contribute considerably to cumulative emissions, result in a~~ cumulatively considerable net increase of any pollutant for which the project region is non-attainment.
- d-e) Because the Basin Plan amendment would not involve the construction of any permanent emissions sources but rather involves short-term and discrete construction activities, it would not expose sensitive receptors to ~~ongoing pollutant emissions posing health risks or creating~~ substantial pollutant concentrations or create objectionable odors affecting a substantial number of people.

IV. BIOLOGICAL RESOURCES

- a-b) The Basin Plan amendment is designed to benefit, enhance, restore and protect biological resources, including fish, wildlife, and rare and endangered species. ~~If, pursuant~~ Nonetheless it is possible that in order to comply with the proposed Basin Plan amendment, specific projects were proposed that were to involve ~~involving~~ construction and earthmoving activities could be proposed that could modify ~~habitats, adversely~~ potentially affect sensitive or special status species, or disturb ~~riparian habitat either directly or through habitat modifications; riparian habitats; or other sensitive natural communities, then local agencies would conduct environmental.~~ Such effects, however, would not be significant. Projects proposed to comply with the Basin Plan amendment implementation requirements are subject to review and identify necessary mitigation measures. Through the CEQA and permitting processes, lead agencies would ensure that readily available mitigation measures are implemented, such as avoiding /or, if feasible, relocating or replacing approval by the Water Board, which will either not approve compliance projects with significant adverse impacts on sensitive habitat. Therefore, the Basin Plan amendment would not substantially affect habitats, /special status species, or riparian habitats, and sensitive natural communities, and its impacts would be or require mitigation measures to reduce impacts to less-than-significant levels. For example, it is not reasonably foreseeable that the Water Board would approve earthmoving work that would disrupt or destroy habitat of a known special status species. The Water Board will work with the proponents of specific compliance projects to come up with actions that not only meet and further the Basin Plan amendment's requirements and goals, but also have minimal impacts. Moreover, in discharging its regulatory program duties, the Water Board would require mitigation measures for work it approves that may impact special status species, riparian habitats, or other sensitive natural communities. These include but are not limited to requiring pre-construction surveys; construction buffers and setbacks; restrictions on construction during sensitive periods of time; employment of on-site biologists to oversee work; and avoidance of construction in known sensitive habitat areas or relocation and restoration of sensitive habitats, but only if avoidance is impossible. Therefore, the Basin Plan amendment would not have a substantial adverse effect, either directly or through habitat modifications, on any sensitive or special-status species, riparian habitats, and sensitive natural communities.
- c) Basin Plan amendment-related implementation actions may contribute to an increase in the acreage of land where habitat enhancement and/or erosion control projects are undertaken, ~~including a fraction of which that would~~ could be within jurisdictional waters of the United States. Such projects (by design) are intended to have significant net positive impacts on the environment. If, however, pursuant to requirements derived from the proposed Basin Plan amendment, specific projects were to be proposed involving construction or earthmoving activities that could adversely affect wetlands, then local agencies would require necessary mitigation measures through their environmental reviews. Lead agencies would

- ensure that readily available measures are implemented, such as avoiding sensitive wetland and riparian habitat or mitigating for unavoidable fill or removal of significant vegetation stands/wetlands. The adverse impacts on wetlands would not be substantial, however. If compliance projects are proposed that could have the potential to disturb wetlands, they would be subject to the Water Board's review and/or approval and the Water Board would require mitigation measures to minimize impacts to less-than-significant levels. The Water Board would work with other local, state, and federal agencies with permitting authorities to avoid, minimize, and mitigate impacts to wetlands consistent with the federal Clean Water Act, the Porter-Cologne Water Quality Control Act, and the Water Boards' Basin Plan's no net loss of wetlands policy. Therefore, the Basin Plan amendment would not adversely affect waters (including wetlands) result in a significant adverse effect on wetlands, and its impacts would be less-than-significant.
- d) ~~If, pursuant to Basin Plan amendment requirements, specific projects are proposed that involve construction or earthmoving activities that could interfere with fish or wildlife-d)~~ The Basin Plan amendment would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The main goal of the Basin Plan amendment is to improve and enhance fish passage. Thus, compliance projects would entail improving migratory fish corridors, not adversely affecting them. It is possible, however, that projects could be proposed to comply with the Basin Plan amendment that involve construction or earthmoving activities that could interfere with wildlife movement, migratory corridors, or nurseries (e.g., channel habitat enhancement projects, fish passage enhancement projects, riparian corridor planting, etc.); then local agencies would require necessary mitigation through their environmental reviews. Lead agencies would ensure that readily available.). If that occurs, the projects would be subject to the Water Board's review and/or approval, and the Water Board would either not approve projects with significant adverse impacts to wildlife movement, corridors, and nursery sites, or require mitigation measures to reduce impacts to less-than-significant levels. Mitigation measures the Water Board routinely requires in these cases include but are implemented, such as not limited to requiring avoiding construction in known wildlife corridors or during the breeding season, requiring buffers and setbacks, avoiding sensitive habitat areas, and minimizing disturbances. Therefore, the Basin Plan amendment would not substantially affect fish or wildlife movement, migratory corridors, or nurseries, and its impacts would be less-than-significant.
- e-f) ~~If, pursuant to Basin Plan amendment requirements, specific projects were proposed that were to involve construction or earthmoving activities, then local agencies would develop such proposals in accordance with their own local policies and ordinances, including any applicable habitat conservation plans, natural community conservation plans, or other plans intended to protect biological resources. Therefore, the Basin Plan amendment would not conflict with local policies, ordinances, or adopted plans.~~

- e-f) The Basin Plan amendment itself does not conflict with any local policies or ordinances protecting biological resources such as trees, or with any adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional or state habitat conservation plan. There is no evidence to suggest that projects proposed to comply with Basin Plan amendment requirements would conflict with these plans.

V. CULTURAL RESOURCES

- a-d) ~~Local agencies could propose specific projects~~Projects involving earthmoving or construction to comply with requirements derived from of the proposed Basin Plan amendment are reasonably foreseeable. Construction would generally be small in scale, and earthmoving would likely occur in areas already disturbed by recent human activity. If necessary to protect historical, archaeological, or paleontological resources, local agencies would require mitigation through their environmental reviews. Lead agencies would ensure that readily available measures are implemented, such as requiring a trained professional to observe major earthmoving work and stop the work if evidence of cultural resources is discovered. (e.g., existing roads, vineyards, ranches)—not at or in areas containing historical resources as defined by section 15064.5 of the CEQA Guidelines. For similar reasons, the construction and earthmoving activities would not destroy unique paleontological resources or unique geologic features or destroy human remains. If during the Water Board’s review and/or approval of specific compliance projects, the Water Board has reason to believe these resources are present, the Water Board will work with the project proponent to ensure that these resources are avoided and/or protected. Therefore, the Basin Plan amendment would not adversely affect any cultural resource, and its impacts would be less-than-significant.

VI. GEOLOGY AND SOILS

- a) The Basin Plan amendment would not involve the construction of habitable structures; therefore, it would not involve any human safety risks related to fault rupture, seismic ground-shaking, ground failure, or landslides.
- b) ~~Local agencies could propose specific~~Specific projects involving earthmoving or construction activities to comply with requirements derived from the proposed Basin Plan amendment are reasonably foreseeable. Such activities would not result in substantial soil erosion or the loss of topsoil. The purpose of the Basin Plan amendment is to reduce erosion, not increase it. To meet the proposed Basin Plan amendment targets, construction would be designed to reduce overall soil erosion associated with erosion. However, temporary earthmoving operations could result in short-term, limited erosion. Local agencies~~These specific compliance projects would be subject to the review and/or approval of the Water~~

- ~~Board, which would require necessary mitigation measures through their environmental review and grading permit processes. Lead agencies would ensure that readily available measures are implemented, such as dust suppression (e.g., spraying water), use of implementation of routine and standard erosion control best management practices, and proper construction site management. In addition, construction projects over 4-one acre in size would require a general construction National Pollutant Discharge Elimination System permit and implementation of a storm water pollution prevention plan to control pollutant runoff such as sediment.~~ Therefore, the Basin Plan amendment would not result in substantial soil erosion, and its impacts would be less-than-significant.
- c-d) The Basin Plan amendment would not involve the construction of habitable structures, and any construction would be relatively small in scale. Local agencies proposing construction to comply with requirements derived from the Basin Plan amendment would ~~undertake engineering and environmental studies~~be required to obtain building permits to ensure that they do not locate structures on unsuitable soil, including expansive soil. Construction would be designed to minimize any potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. Therefore, the Basin Plan amendment would not create safety or property risks due to unstable or expansive soils.
- e) The Basin Plan amendment would not require wastewater disposal systems; therefore, affected soils need not be capable of supporting the use of septic tanks or alternative wastewater disposal systems.

VII. HAZARDS AND HAZARDOUS MATERIALS

- a-fd) It is possible that hazardous materials or substances may be discovered during project activities associated with erosion control and/or habitat enhancement. ~~Remediation~~Required remediation actions ~~could~~would include the proper disposal and transport of contaminated soils, but such waste is expected to be of small volume and duration. Proper handling in accordance with relevant laws and regulations would minimize hazards to the public or the environment, and the potential for accidents or upsets. Therefore, hazardous waste transport and disposal would not create a significant public or environmental hazard, and would be a less-than-significant impacts associated with transport and disposal of hazardous materials and substances, and no impacts from foreseeable accidents or emissions.
- e-f) The project would not require actions in the vicinity of airports or airstrips.
- g) Hazardous waste management activities resulting from the Basin Plan amendment would not interfere with any emergency response plans or emergency evacuation plans.
- h) The Basin Plan amendment would not affect the potential for wildland fires.

VIII. HYDROLOGY AND WATER QUALITY

- a) The project would amend the Basin Plan, which articulates applicable water quality standards; therefore, it would not violate standards or waste discharge requirements.
- b) The Basin Plan amendment would not decrease groundwater supplies or interfere with groundwater recharge. Channel habitat enhancement projects to control channel incision, and/or the construction of facilities such as retention or detention basins, infiltration basins, or vegetated swales could increase result in minor increases in groundwater recharge.
- c) ~~Local agencies could propose specific~~ Specific projects involving earthmoving or construction activities to comply with requirements derived from the proposed Basin Plan amendment are reasonably foreseeable. Such projects could affect existing drainage patterns. However, to meet the proposed Basin Plan amendment allocations, they would be designed to reduce overall soil erosion, not increase it. Nevertheless, temporary earthmoving operations could result in short-term, limited erosion. ~~If necessary to address specific impacts, local agencies~~ These specific compliance projects would be subject to the review and/or approval of the Water Board, which would require mitigation measures through their environmental reviews. Lead agencies would ensure that readily available measures are implemented, such as dust suppression (e.g., spraying water), use of implementation of routine and standard erosion control best management practices, and proper construction site management. In addition, construction projects over one acre in size would require a general construction National Pollutant Discharge Elimination System permit and implementation of a storm water pollution prevention plan. Therefore, the Basin Plan amendment would not result in substantial erosion, and its impacts would be less-than-significant.
- d) The Basin Plan amendment could: a) involve earthmoving that could affect existing drainage patterns; b) contribute to enhancement of baseflow during the dry season; and/or c) contribute to increases in the amount of riparian vegetation and/or large woody debris in stream channels to enhance habitat conditions. ~~However, These actions should reduce flooding hazards.~~ Basin Plan amendment-related activities would not substantially increase impervious surfaces, or peak flow releases from dams in any part of the watershed. ~~Also, local agencies implementing measures to protect or enhance vegetation and woody debris in stream channels would, through their environmental reviews, require that no significant adverse impacts to flood risk and/or property damage occur. The purpose of the Basin Plan amendment is to reduce sedimentation in streams, which has the effect of reducing flooding, and is environmentally beneficial. Nevertheless, placement of large woody debris in stream channels to benefit salmonids could potentially affect stream levels upstream; however, such compliance projects would be subject to Water Board review and/or approval and the Water Board would ensure that the projects are designed to not adversely~~

affect upstream areas. Additionally, habitat enhancement projects to enhance or improve baseflow would be designed to avoid adverse impacts from flooding and any releases to support baseflow would occur during the dry season. Therefore, the Basin Plan amendment would not increase flooding, ~~siltation, or erosion.~~

- e-f) Basin Plan amendment-related activities are, by design, intended to decrease peak runoff rates from upland land uses, as needed to reduce fine sediment input to channels and channel erosion. Therefore, the Basin Plan amendment would not increase the rate or amount of runoff, ~~or exceed the capacity of storm water drainage systems, or degrade water quality.~~
- g-i) Basin Plan amendment-related construction would be small in scale and would not include housing or structures that would pose or be subject to flood hazards.
- j) Basin Plan amendment-related construction would not be subject to substantial risks due to inundation by seiche, tsunami, or mudflow.

IX. LAND USE AND PLANNING

- a) Basin Plan amendment-related construction would be too small in scale to divide any established community.
- b-c) The Basin Plan amendment would not conflict with any land use plan, policy, or regulation, and would not conflict with any habitat conservation plan or natural community conservation plan.

X. MINERAL RESOURCES

- a-b) Basin Plan amendment-related excavation and construction would be relatively small in scale and would not result in the loss of availability of any known mineral resources.

XI. NOISE

- a) Earthmoving and construction could temporarily generate noise. Projects that local agencies propose to comply with requirements derived from the Basin Plan amendment would be required to be consistent with the local agencies' own standards.
- b) To comply with requirements derived from the Basin Plan amendment, ~~local agencies could propose~~ specific projects involving earthmoving or construction, which could result in temporary groundborne vibration or noise. ~~If necessary, local agencies could require mitigation measures through their environmental~~

- reviews. ~~Lead agencies would ensure that readily available measures, are implemented, such as restricting the hours of operations and ensuring that earthmoving equipment is equipped with mufflers to reduce noise.~~reasonably foreseeable. The Napa County Health and Safety Code has established limits to exterior noise; these limits vary depending on land use and range from 45 decibel for rural residential areas to 75 decibels for industrial areas. The four cities within the Napa Valley watershed have similar local noise ordinances that regulate allowable levels of noise and specify a mechanism for enforcement. Construction projects to comply with the Basin Plan would be required to comply with these local ordinances to keep noise levels to less-than-significant levels. Therefore, the Basin Plan amendment would not result in substantial noise, and its impacts would be less-than-significant.
- c) The Basin Plan amendment would not cause any permanent increase in ambient noise levels. Any noise would be short-term in nature.
 - d) To comply with requirements derived from the Basin Plan amendment, ~~local agencies could propose specific projects involving earthmoving or construction, which could result in temporary increases in ambient noise levels in excess of noise levels without the Basin Plan Amendment.~~impacts, are reasonably foreseeable. Noise-generating operations would, however, have to comply with local noise minimization requirements, including local noise ordinances. ~~If necessary, local agencies could require that noise reduction mitigation measures are implemented, such as restricting the hours of noise-generating operations.~~to keep noise to less-than-significant levels. Therefore, the Basin Plan amendment would not result in substantial noise impacts, and its impacts would be less-than-significant.
 - e-f) The Basin Plan amendment would not cause any permanent increase in ambient noise levels, including aircraft noise. Therefore, it would not expose people living within an area subject to an airport land use plan or in the vicinity of a private airstrip to excessive noise.

XII. POPULATION AND HOUSING

- a-c) The Basin Plan amendment would not affect the population of the Bay Area, or Napa Valley. It would not induce growth through such means as constructing new housing or businesses, or by extending roads or infrastructure. The Basin Plan amendment would also not displace any existing housing or any people that would need replacement housing.

XIII. PUBLIC SERVICES

- a) The Basin Plan amendment would not affect populations or involve construction of substantial new government facilities. The Basin Plan amendment would not affect service ratios, response times, or other performance objectives for any public services, including fire protection, police protection, schools, or parks.

XIV. RECREATION

- a-b) Although the Basin Plan amendment would not affect population levels, potential enhancement of fisheries habitat and stream aesthetics has the potential to contribute to an increase in river-focused recreational activities (e.g., kayaking, rafting, fishing, swimming, wading, birding, etc.). Increases in these activities are expected to cause less than significant impacts on the environment. No recreational facilities would need to be constructed or expanded.

XV. TRANSPORTATION / TRAFFIC

- a-b) Because the Basin Plan amendment would not increase population or provide employment, it would not generate any ongoing motor vehicle trips. Earthmoving and construction would be temporary, and related traffic would be of short-term duration. Therefore, the Basin Plan amendment would not substantially increase traffic in relation to existing conditions. Levels of service would be unchanged.
- c) The Basin Plan amendment would not affect air traffic.
- d) Reductions in road-related erosion called for by the Basin Plan amendment would not require implementation of hazardous design features or incompatible uses in order to meet the TMDL.
- e) Minor construction and earthmoving operations to reduce road-related erosion that would occur as a result of adoption of the Basin Plan amendment is not expected to restrict emergency access. Local agencies would confirm that specific proposals would not restrict emergency access through their environmental reviews.
- f) Because the Basin Plan amendment would not increase population or provide employment, it would not affect parking demand or supply.
- g) Because the Basin Plan amendment would not generate ongoing motor vehicle trips, it would not conflict with adopted policies, plans, or programs supporting alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS

- a) The project would amend the Basin Plan, which is the basis for wastewater treatment requirements to improve water quality and the environment in the Bay Area; therefore, the Basin Plan amendment would be consistent with such requirements.
- b) Although the Basin Plan amendment proposes planning and regulatory efforts to facilitate enhancement of baseflow in streams, since no specific actions are proposed or required at this time, it would be speculative to evaluate possible physical changes to the environment at this time. Should local agencies propose specific projects at a future date, those would be subject to environmental review, and mitigation as needed.
- c) New or expanded stormwater drainage facilities are not called for under the proposed Basin Plan amendment.
- d-e) Because the Basin Plan amendment would not increase population or provide employment, it would not require an ongoing water supply. It would also not require ongoing wastewater treatment services.
- f-g) Basin Plan amendment implementation would not substantially affect municipal solid waste generation or landfill capacities.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

- a) When taken as a whole, the Basin Plan amendment would not degrade the quality of the environment. The proposed Basin Plan amendment is intended to benefit wildlife and rare and endangered species by decreasing fine sediment supply and enhancing stream-riparian habitat conditions in Napa River and its tributaries.
- b) As discussed above, the Basin Plan amendment could pose some less-than-significant adverse environmental impacts related to earthmoving and construction operations. These impacts would be individually limited, and most would be of short-term duration. As specific implementation proposals are developed and proposed, lead agencies they would undertake environmental be subject to review and identify specific environmental impacts/or approval by the Water Board, which would either disapprove projects with significant and appropriate unacceptable impacts or require mitigation measures. In cases where potential, such as the implementation of best construction management practices, to ensure that impacts could be significant, local lead agencies would adopt readily available mitigation measures to ensure that possible impacts would be remain less-than-significant. Therefore, the incremental effects of the Basin Plan amendment would be negligible when viewed in the context of the overall

~~environmental changes foreseeable. For this reason, the Basin Plan amendment's cumulative effects would be less than significant, and adopting the Basin Plan amendment would require no mandatory findings of significance. Therefore, these future projects would not lead to cumulatively considerable significant impacts. Additionally, the proposed Basin Plan amendment when viewed in connection with the effects of past, current, and probably future projects (such as other environmentally beneficial projects like the Napa Flood Control project and the Rutherford DUST River Restoration project) would not result in cumulatively considerable impacts.~~

- c) The Basin Plan amendment would not cause any substantial adverse effects to human beings, either directly or indirectly. The Basin Plan amendment is intended to benefit human beings through implementation of actions predicted to enhance fish populations, aesthetic attributes, recreational opportunities, and contribute to a reduction in property damage in and/or nearby to stream channels in the Napa River watershed.

7.3 Alternatives

In defining and presenting reasonable alternatives to the proposed Basin Plan amendment, we discuss how each alternative could affect foreseeable environmental outcomes, and the extent to which each alternative would achieve the goals of the proposed amendment. Furthermore, considering the nature of the proposed amendment - a total maximum daily load (TMDL) for sediment and a related habitat enhancement plan - we examine effects of different choices for key elements of the TMDL and habitat enhancement plan including: a) numeric targets⁴ for sediment; b) sediment allocations⁵; and/or c) schedule, spatial extent, and types of actions required to achieve allocations, targets, and habitat enhancement goals. Our analysis includes the following alternatives:

(1) ***Proposed Basin Plan amendment*** - involves actions to reduce fine sediment supply to 125 percent of natural background supply, and actions to enhance habitat conditions in stream channels and riparian corridors downstream of municipal reservoirs in Napa River watershed. Sediment reduction and habitat enhancement objectives are achieved by 2025.

~~(2) ***Implementation Actions Required for the Entire Watershed***—as above except actions are implemented throughout the watershed~~

⁴ Napa River does not meet water quality objectives for sediment, settleable material, and population and community ecology. Numeric targets, which are a required part of a TMDL, define numeric values for measurable water quality parameters (e.g., gravel permeability), and therefore, a basis for establishing attainment of water quality standards.

⁵ A TMDL is a legally defined sum of pollutant allocations (e.g., maximum amounts of sediment that can be discharged) that are listed by source category (e.g., vineyards, ranches, roads, urban areas, etc.).

(32) ***Implementation actions to address sediment only*** – identical to proposed BPA except actions to enhance baseflow, temperature, and/or fish passage are not formally recognized Basin Plan amendment, omitting the Habitat Enhancement Plan

(43) ***Additional numeric targets for sediment***

(54) ***No Action/No Basin Plan is not amendedamendment***

Alternative 1: Proposed Basin Plan amendment

The proposed Basin Plan amendment staff ~~proposes~~ is based on the technical analyses presented in Chapters 2 through 6, including of this Staff Report. The amendment includes: a) numeric targets for streambed scour and permeability at potential spawning sites for salmonids; b) a total maximum daily load (TMDL) for sediment in the Napa River watershed; c) allocations for sediment ~~input~~inputs to channels ~~set~~ by source category; and d) an implementation plan ~~that specifies~~specifying actions to reduce fine sediment supply associated with land-use activities⁶, and complimentary actions to ~~enhance baseflow, temperature, habitat access, and habitat complexity.~~salmonid health and sustainability of the fishery. Adoption of the Basin Plan amendment sets the sediment TMDL at 125 percent of natural background load.

Implementation actions to reduce fine sediment supply associated with land-use activities would focus on road-related erosion, channel incision, vineyards, parks and open space, municipal public works, rural lands⁷, and structural development projects.

Implementation actions to enhance habitat conditions would focus on baseflow, habitat complexity, stream temperature, and fish passage in mainstem Napa River and its tributaries. Adoption of the proposed Basin Plan amendment would result in attainment of numeric targets and allocations for sediment, and habitat enhancement objectives by the fall of 2025.

~~Land areas and channel reaches located upstream of municipal water supply dams are not included in the project area for the proposed BPA because:~~ Alternative 2: Implementation actions to address sediment only

- a) ~~The physical expression of sediment impairment in Napa River is an increase in the concentration of fine sediment (almost all of which is sand) in the streambed;~~

⁶ Between 1994 and 2004, about 2/3 of total sediment input to channels was from land use activities, and total sediment load in Napa River at Soda Creek was approximately 180 percent of natural background (e.g., natural background being the amount Napa River would have received absent human caused erosion and dams). To achieve the TMDL, inputs from land use activities need to be reduced from current value of 116 percent of natural background to proposed allocation of 58 percent of natural background supply.

⁷ As defined by County of Napa, Department of Conservation, Development, and Planning, rural lands include “non farmed and non-grazed portions of parcels > 10 acres that contain one or more residences, and/or a winery; vacant residential parcels > 10 acres; and/or portions of 10 acre or larger parcels with a secondary vineyard, orchard, or grazing [use].”

- b) ~~All sand inputs to channels upstream of municipal dams is deposited in the adjacent reservoirs, and hence does not reach Napa River; and~~
 - c) ~~The municipal water supply reservoirs and upstream water bodies are not listed as impaired by sediment, and we are not aware of evidence to support listing(s).~~
-

Alternative 2: Implementation actions required for the entire watershed

~~This alternative would be identical to the proposed BPA except geographic area for sediment reduction and habitat enhancement would be expanded to cover the entire Napa River watershed. It is important to note that actions conducted to control sediment input to channels located upstream of municipal dams would not have a significant effect on fine sediment concentration in the bed of the Napa River (as described immediately above). Also, municipal reservoirs and/or upstream water bodies are not listed at present as impaired by sediment. Substantial additional costs would be required to implement efforts to reduce sediment supply and to enhance habitat conditions in stream channels upstream of municipal dams. Although there would be additional overall water quality benefits, benefits to steelhead and/or Chinook salmon populations would not appear to be significant, absent removal of municipal dams, which does not appear likely at present, considering the prominence of the reservoirs in providing water supply for local municipalities⁸.~~

This alternative is identical to the proposed Basin Plan amendment except implementation would focus solely on actions to reduce sediment input to channels from land-use activities. Under this alternative, the Water Board would not set goals or recommend actions to enhance habitat and flow. This alternative would satisfy legal requirements associated with the Clean Water Act and would resolve sediment-related threats to salmon and steelhead populations.

Alternative 3: Additional numeric targets for sediment

Sediment impairment is expressed by an increase in the concentration of fine sediment in the bed of the Napa River. Under the proposed Basin Plan amendment, the Water Board will adopt two numeric targets related to the concentration of fine sediment in the streambed: spawning gravel permeability and redd scour depth. These parameters gauge survival from spawning to emergence of salmonid eggs and larvae. Under the *Additional numeric targets for sediment* alternative, additional monitoring parameters and target values would be proposed to evaluate relationships between sedimentation and water quality including: a) percentage of fine sediment in the streambed as a direct measure of sedimentation; b) biomass of aquatic invertebrate prey species in riffles to evaluate relationship between sedimentation and food supply for juvenile salmonids; and c) embeddedness of coarse particles. Implementation of this alternative would require development of accurate estimates of each of these parameters.

⁸ Resident *O. mykiss* (rainbow trout) which inhabit municipal reservoirs and channels draining into the reservoirs may be reproductively isolated from downstream resident and ocean migrating *O. mykiss* (steelhead) as a result of the dams, which constitute significant structural and flow-related barriers or impediments to downstream migration.

Alternative 4: No Action/No Basin Plan amendment

If the Water Board does not adopt the Napa River sediment total maximum daily load (TMDL), the U.S. Environmental Protection Agency (USEPA) will be required to do so, pursuant to the Clean Water Act Section 303(d) listing of the Napa River as impaired by sediment. USEPA would likely rely, at least in part on analyses completed to date. Within legal constraints the agency would be free to develop a TMDL in any manner they deem appropriate. Subsequently, the Water Board would be required to prepare a plan specifying actions to resolve the impairment, as needed to attain and maintain the numeric targets and sediment allocations approved by USEPA.

Analysis of the Preferred Alternative

The *No Action* alternative is not realistic because there is a legal requirement under the Clean Water Act to adopt a TMDL, and not preferred because there is a higher potential for disconnects between the TMDL and implementation plan, when these two parts are developed by different agencies. In addition, it would delay adoption and subsequent implementation and waste public monies as significant amount of public funds have already gone into the development of the proposed Basin Plan amendment.

Alternative 3: Implementation actions to address sediment only

This alternative is identical to the proposed Basin Plan amendment except implementation would focus solely on actions to reduce sediment input to channels from land-use activities. Under this alternative, the Water Board would not set goals or recognize actions to enhance habitat and flow. This alternative would satisfy legal requirements associated with the Clean Water Act and would resolve sediment-related threats to salmon and steelhead populations. The *Implementation actions to address sediment only* alternative would resolve sediment-related threats to salmonids, and related beneficial uses. However, actions to enhance baseflow, temperature, habitat complexity, and habitat access are necessary to rebuild and sustain viable populations of steelhead and salmon in Napa River watershed, and these elements of the proposed Basin Plan amendment would not be recognized or recommended. The timeframe for rebuilding and sustaining viable populations of steelhead and salmon would be increased. Therefore, the *Implementation actions to address sediment only* alternative is not preferred.

Alternative 4: Additional numeric targets for sediment

Sediment impairment is expressed by an increase in concentration of fine sediment in the bed of Napa River. The proposed BPA would adopt two numeric targets related to concentration of fine sediment in the streambed: spawning gravel permeability and redd scour depth. These parameters gauge survival from spawning to emergence of salmonid eggs and larvae. Under the Additional Numeric Targets for Sediment alternative, additional monitoring parameters and target values would be proposed to evaluate relationships between sedimentation and water quality including: a) percentage of fine sediment in the streambed as a direct measure of sedimentation; b) biomass of aquatic invertebrate prey species in riffles to evaluate relationship between sedimentation and

food supply for juvenile salmonids; and c) embeddedness of coarse particles⁹. We note that substantial effort would be required to develop accurate estimates of each of these parameters, and The Additional numeric targets for sediment alternative would have much higher sediment monitoring costs than the proposed Basin Plan amendment, and those costs could reduce resources available for complimentary monitoring of other stressors and the population status of steelhead and salmon. In addition, scientific consensus does not exist regarding target values for biomass of vulnerable aquatic invertebrate prey species or embeddedness. For these reasons, the Additional numeric targets for sediment alternative is not preferred.

Alternative 5: No Basin Plan Amendment The Proposed Basin Plan amendment alternative is preferred because in addition to providing means for attaining water quality standards, it is environmentally superior to the Implementation actions to address sediment only and No Action alternatives. It is more scientifically defensible and cost-effective than the Additional numeric targets alternative.

~~If the Water Board does not adopt the Napa River sediment total maximum daily load (TMDL), the U.S. Environmental Protection Agency (USEPA) would be required to do so. In such a case, USEPA would likely rely, at least in part on analyses completed to date. Within legal constraints however, they would be free to develop a TMDL in any manner they deemed appropriate. As with the Water Board, USEPA would be required to identify targets and allocate sediment loads, and although it would be speculative to evaluate how the TMDL would differ with USEPA as the lead, there would be one key difference: USEPA would not prepare a plan specifying actions to resolve impairment (e.g., an implementation plan). Instead, the Water Board would be required to do so, as needed to attain and maintain the numeric targets and sediment allocations approved by USEPA. Under this alternative there would be a higher probability for a mismatch between the TMDL and implementation plan as these interconnected elements would be developed by two different agencies.~~

Preferred Alternative

~~The No Action alternative is not realistic because there is a legal requirement under the Clean Water Act to adopt a TMDL, and not preferred because there is a higher potential for disconnects between the TMDL and implementation plan, when these two parts are developed by different agencies. The Additional Numeric Targets alternative would have much higher sediment monitoring costs, which could reduce resources available for complimentary monitoring of other stressors and the population status of steelhead and salmon. Since rebuilding and maintaining populations of steelhead and salmon is a primary objective of the proposed BPA, and because salmonid population declines appear to be the result of interacting stressors, the Additional Numeric Targets for Sediment alternative is not preferred.~~

⁹ Embeddedness is a measure of amount of fine sediment (e.g., fine gravel and sand) filling spaces between coarse grains (e.g., coarse cobbles and boulders) in the streambed. When coarse grains are highly embedded, biomass of vulnerable aquatic invertebrate prey species (for salmonids) and quality of high flow refuge habitat for juvenile steelhead may be substantially reduced.

~~The Implementation Actions Required for the Entire Watershed could yield greater water quality benefits than the proposed BPA. This alternative is not preferred because it appears that implementation of sediment reduction and habitat enhancement efforts upstream of municipal dams would not yield significant benefits to salmon or steelhead populations, and/or related beneficial uses.~~

~~The Implementation Actions to Address Sediment Only alternative would resolve sediment related threats to salmonids, and related beneficial uses. However, goals and actions to resolve other key stressors would not be adopted, and therefore, the timeframe for rebuilding and sustaining viable populations of steelhead and salmon would be increased, and stakeholder buy-in would be diminished. Therefore, the Implementation Actions to address Sediment Only alternative is not preferred.~~

~~The Proposed Basin Plan Amendment alternative is the preferred alternative because: a) it is environmentally superior to the Implementation Actions to address Sediment Only and No Action alternatives; and b) it is less expensive than the Implementation Actions Required for Whole Watershed alternative, while providing a means for attaining water quality standards. The proposed BPA will not cause any significant adverse impacts to the environment.~~

7.4 Government Code §57004: Peer Review

We sent the staff report and proposed basin plan amendment to two scientists for peer review. The two peer reviewers are: 1) Dr. Robert Naiman, a river ecologist at the University of Washington, who has special expertise in stream-and-riparian ecosystem process interactions, and dynamics; and 2) Dr. William Rahmeyer, a civil engineer at the Utah State University, who specializes in fluid mechanics and hydraulics applied to river and reservoir management issues. The peer reviewers' responses confirmed that the scientific portion of the proposed TMDL and implementation plan are based on sound scientific knowledge, methods, and practices, thus satisfying Gov. Code § 57004. Actions to implement the habitat enhance plan are recommended, not required, and therefore not part of the rule making process subject to scientific peer review requirements. A summary of the peer review comments and our responses is provided below.

In his introductory remarks, Dr. Naiman wrote:

As a whole, much of the information in the documents is well researched, the general conclusions founded on solid facts, the rationale for needing to reduce sediment loads justified in light of salmon habitat, and some of the recommended approaches are reasonable. The authors have done a good job in addressing and articulating a highly complicated issue that has implications going far outside the perennially wetted channels. I have visited the Napa River and its tributaries several times, and concur that sediment loads and channel incision are too severe to adequately support steelhead and Chinook salmon for the long-term. Spawning and rearing habitat, as well as general environmental conditions, are not optimal for

these and other native aquatic species. Recommendations contained in the Technical Report need to be adopted – but are only a start – if the river network is to re-attain a reasonable ecological vitality. (SFBRWQCB 2007)

While supporting the basis for the proposed TMDL for sediment, Dr. Naiman also commented that while the proposed habitat enhancement plan provides a foundation for restoring steelhead and Chinook populations, in his opinion it does not go far enough. In response we conducted additional analyses as related to the scope of the project and available resources and data, and identify additional monitoring and studies needed to further our understanding of fish population dynamics. In addition, we provided additional information that was lacking in the draft staff report regarding large-scale stream and riparian restoration projects that are now in-progress or being planned in the Napa River watershed (e.g., restoration projects in the Rutherford-to-Oakville and Oakville-to-Oak Knoll reaches of the Napa River, and the Napa Green Certification Program).

Dr. Naiman also requested that we provide additional information and/or clarifications regarding various aspects of the problem statement, methods used in the source analysis, and the relationship between spawning gravel permeability and sedimentation. In response, we have provided additional information and clarification in the Staff Report.

Dr. Rahmeyer provided more general comments, focused on the details of methods used to develop the source analysis, and prompted us to provide additional information regarding current channel conditions and mechanisms for channel incision. During the peer review period, he requested additional information regarding our methods, after which he stated in his written comments that:

My initial concern for both the technical report and the enhancement plan is that it is not clear where the supporting data, results, field measurements, and documentation can be found. Supporting documentation and methodology was later provided that must be appended to and referenced by the 2/17/06 Technical Report. The report does need additional explanation and comments about the appended supporting documentation. (SFBRWQCB 2007)

In response, we included additional methodological details in this Staff Report, referencing the more detailed methodology we provided to Dr. Rahmeyer.

All peer review comments and our specific responses are contained in a document entitled “Napa River Watershed Sediment TMDL: Responses to Peer Review Comments,” a reference to this document.

Please note that numbering of the sections of Chapter 7 beginning with “7.5 Economic Considerations” has been revised to accommodate the addition of the new Section 7.4.

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