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Total Maximum Daily Load (TMDL) for Sediment in the Napa River Watershed

No.	Commenter	Commenter Name
1.	U.S. Environmental Protection Agency – Region 9	Diane E. Fleck
2.	Friends of the Napa River (FONR)	Bernhard Krevet
3.	Living Rivers Council	Thomas N. Lippe Dennis Jackson Patrick Higgins

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No.	Author	Comment	Response
0.1)	Multiple	Some of the comments submitted in opposition to the State Board's approval of this TMDL were previously submitted to the Regional Water Board and submitted verbatim to the State Board, without further explanation.	<p>Many of the individual comments submitted to the State Water Board on this matter are identical to a comment submitted to the San Francisco Bay Water Board (SF Bay Water Board) at the time the draft version of this TMDL was under consideration. As part of its consideration process, the SF Bay Water Board provided written responses to all of the significant comments it received. The SF Bay Water Board's responses either indicated that changes would be made to the regulatory provisions or to the related documentation in response to the comment (in which case corresponding changes were made), or the SF Bay Water Board's written responses indicated that that changes would not be made, and the response included the reason.</p> <p>Where a commenter merely repeats a comment that was originally tendered to the SFBay Water Board on a prior version of a TMDL, but fails to disclose what quarrel, if any, the commenter has with the response provided or the action taken by the SF Bay Water Board in response to the comment, the State Water Board is unable to address the comment. Specifically, in those cases where the SF Water Board made changes in response to a comment, the commenter has failed to explain how the changes were allegedly inadequate. Likewise, where the SF Bay Water Board did not make changes, the commenter has failed to explain how the response or explanation that the SF Bay Water Board provided was allegedly inadequate, or even whether the commenter believes that the response was inadequate.</p> <p>Where a commenter has merely repeated a</p>

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			comment submitted below, the State Water Board cannot divine what the commenter believes has been adequately satisfied and what has not, nor can it determine the reason for any remaining dissatisfaction. State Board staff will review the SF Bay Water Board’s responses to ensure that they are thorough and address the specific question presented.
1	U.S. EPA	EPA supports the watershed approach taken to address the sediment impairment in the Napa River. We look forward to working with you to support implementation of the package.	Comment Noted
2	U.S. EPA	The TMDL is technically thorough and reasonable. It contains appropriate source analyses, numeric targets, linkage analyses, TMDLs, allocations and wasteload allocations. The BPA also contains a detailed implementation plan. Current federal regulations do not define TMDLs as containing implementation plans; however, EPA concurs with and supports the State's proposed implementation approaches. EPA supports the watershed approach taken to address the sediment impairment in the Napa River. We look forward to working with you to support implementation of the package.	Comment Noted
3	Friends of the Napa River (FONR)	The document supports much monitoring of the fisheries, watershed, and related activities in the coming years. There are targets and planning goals that extend out as far as 17 years, which is better than most other plans except for public utilities planning documents (often 50 years). The planning horizon should be much longer, but this is an improvement. Also, the existence of adaptive management, compliance monitoring (called implementation monitoring in the document), and effectiveness monitoring is probably required by the EPA. These elements are standard in most ESA-related federal documents, since they include review by NOAA (NMFS) and USFWS.	Comment Noted
4	FONR	FONR appreciates the proposed activities for habitat enhancement, protection of base flows, fish passage improvement, and water temperature improvement). In Table 5.2 (page 3965) the action “Install and maintain dial-up water-level gage programs and implement public education program in 10 key tributaries for steelhead” is vital to success. Such real time monitoring compiles	Comment Noted

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		<p>databases that quickly accrue and continue to assist in future watershed management. Further on down the Table 5.2 column Action 2.4 reads “Conduct water rights compliance survey to protect fish and water rights.” This directive, among other actions, requires monitoring of illegal riparian users along the Napa River. This task very rarely gets done on most watersheds, and riparian users only increase as time goes on. It does protect water rights because those with true water rights are able to fulfill their legal allotments. It also protects fish because these illegal riparian users rarely if ever screen their intakes, a situation that can impinge or entrain Chinook salmon and steelhead fry (which in their smallest and most vulnerable life-stage rear along the river margins where illegal intakes most often occur).</p>	
5	FONR	<p>Page 3961, Table 4.2 (<i>Page 11 in Basin Plan Amendment (BPA)</i>): [Grazing] Performance Standards: “minimal residual dry matter [RDM] values consistent with University of California Division of Agriculture and Natural Resources Guidelines.”</p> <p>Reference given (Publication 8092, Table 2) suggests RDMs for grazing on slopes of 20-40% and even >40%. To meet this TMDL, no cattle grazing should be allowed on slopes greater than 30%. Also, all RDM values should be for <i>minimum</i> measurements. Measuring “Average RDM values” can result in cattle distribution problems that render some areas virtually devoid of vegetation and therefore subject to erosion from rainwater striking bare ground (the most erosive of all natural physical processes). Such a scenario is a direct conflict to a TMDL for the Napa watershed. Cattle distribution problems should be monitored and adaptively managed; and movements of salt licks, molasses stations, and watering troughs should be changed if distribution problems occur (i.e., cattle affect or denude one area, though the average RDM is acceptable). If livestock continue to denude areas, allowable RDM levels should be adjusted significantly upwards (e.g., 140% of UCDA levels, as in <i>The East Bay Watershed Master Plan (EBMUD, 1996)</i>).</p>	<p>State Board staff interprets the reading of UCCE (2002) is that all sites sampled must meet or exceed the minimal standard for residual dry matter in order to infer that the discharge of pollutants of concern (fine sediment, nutrients, pathogens, and amplified runoff) to be effectively controlled. State Board staff also agrees that a stratified random sample is required to make sure that sites of intensive use or occupancy are sampled and also meet the minimal standard.</p>
6	FONR	<p>Page 3962, Table 4.3 (<i>Page 12 in BPA</i>): “Roads. Road-related sediment delivery to channels ≤500 cubic yards per mile per 20-year period.”</p> <p>A footnote is needed here to show source of methodology for this measurement.</p>	<p>Comment Noted</p> <p>To provide clarity on this issue a footnote was added to Tables 4.1-4.4 as follows:</p> <p>Methods for estimating rates of sediment delivery</p>

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		Page 3963, Table 4.4 (<i>Page 13 in BPA</i>) same as comment for page 3962 (<i>Table 4.3</i>)	<p>to channels are described in general terms in "Upslope Erosion Inventory and Erosion Control Guidance" Weaver et al. (2006).</p> <p>These changes were reflected in an Executive Officer Memo dated September 29, 2010 initiating minor, nonsubstantive corrections to the Basin Plan Amendment.</p>
7	FONR	paragraph 2, line 3 (<i>Page 20 in BPA</i>): insert "age" between run-size and genetic structure. It is important to discern the age of Chinook salmon since in California they can return to spawn at 1, 2, 3, 4, or 5 years. Most Chinook salmon escapement occurs at 3 years, but many at 2 and some as late as 5.	<p>Please note that this portion of monitoring section is intended to emphasize the need and value of fisheries population monitoring and limiting factors analysis. The monitoring plan may change along with data needs throughout the life of the TMDL. The TMDL uses an adaptive implementation plan. The Water Board will adapt the TMDL and implementation plan to incorporate new and relevant scientific information such that effective and efficient measures can be taken to achieve the TMDL allocations. This includes changes monitoring requirements as new and relevant scientific information becomes available.</p> <p>Thank you for this recommendation, this section on Page 20 of the Basin Plan Amendment now reads as follows:</p> <p style="padding-left: 40px;">Such a program might include the following elements: 1) adult spawning run-size, age and genetic structure; 2) smolt production; and 3) egg survival from spawning to emergence (emergence trapping).</p> <p>These changes were reflected in an Executive Officer Memo dated September 29, 2010 initiating minor, nonsubstantive corrections to the Basin Plan Amendment.</p>
8	FONR	Page 3970, paragraph 2 lines 4-9 (<i>Page 20 in BPA</i>): text suggests at least five years of monitoring (2 current plus 3 more). This period is too short to show oscillations in the salmon population. Fall-run	<p>State Board staff agree with the comment, as does the staff of the SF Bay Water Board. Please also see responses to comments 7, 9,</p>

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		Chinook salmon on the Sacramento River and associated drainages have longer periods of oscillation, and a picture of the population cannot be obtained without at least one of these full cycles monitored (e.g., 10-12 years – see attached Fall Run Chinook Salmon population figure from Miyamoto & Hartwell, 2001).	and 46.
9	FONR	Page 3070, end of Paragraph 2 (<i>page 20 of BPA</i>): emergence trapping is not as effective as smolt trapping. Emergence trapping is also subject to vandalism when attempted in a highly traversed and populated area like the Napa Valley. If it is attempted, significant (and likely expensive) site security must be budgeted. Sufficient relationships have been established in other systems for fry emergence based on degree-days, % fines, and average intergravel flow and can be used as a surrogate for emergent trapping; so the cost-to-benefit in the Napa River may be too high to be practical. Accurate redd counts and smolt trapping in successive years will go far to determine Chinook salmon success. If emergent trapping must be done, the field personnel for these difficult tasks must show a history of similar successful studies on other watersheds with related published papers in refereed journals. It is a difficult task and those who implement it should have no procedural learning curve.	Staff assumes that commenter is referring to Page 3970 not 3070 of the administrative record (or page 20 of the BPA) as above. The SF Bay Water Board has not committed to emergence trapping; they are only stating that it may be of value. The SF Bay Water Board has and will continue to defer to local and academic experts in our support for fisheries population sampling and limiting factors analysis including Jonathan Kohler, the long-time fisheries biologist for the Napa County RCD.
10	FONR	Page 3070, end of Paragraph 4: “d) relative abundance of native and introduced fish.” “introduced fish” should specify striped bass (<i>Morone saxatilis</i>) (predation on smolts in tidal reaches) and green sunfish (<i>Lepomis cyanellus</i>) (predation on fry between Mill Creek and Soda Creek). Sacramento pikeminnow (<i>Ptychocheilus grandis</i>), a native species, prey on salmonid fry but are less numerous, have evolved with them, and side-by-side comparisons with the non-natives do not suggest as much of a threat.	Staff assumes that commenter is referring to Page 3970 (or page 20 of the BPA) as above. With regard to introduced species, SF Bay Water Board’s concerns are broader than just predation, and even given this clarification, species of concern may change in future years. Since this language will be included in the SF Water Board’s Basin Plan, State Board Staff recommends leaving this portion as a general or non-specific as possible.
11	Living Rivers Council (Thomas N. Lippe)	The current TMDL proposal reflects a number of changes that Regional Board staff have made in response to comments submitted by LRC. LRC appreciates the fact that the proposal is much improved as a result of this process. Nevertheless, the proposal still has a number of scientific, regulatory and legal flaws that LRC believes should be remedied before this Board approves the proposal.	Commenter incorrectly states that “[t]he TMDL adopts, as a performance standard for controlling surface erosion from vineyards, Napa County’s enforcement of its Conservation Regulations on new vineyard conversions.” The TMDL does not adopt the program as a performance standard or as a mitigation measure for the TMDL; it simply acknowledges the existence of the program as

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	<p>The TMDL adopts, as a performance standard for controlling surface erosion from vineyards, Napa County's enforcement of its Conservation Regulations on new vineyard conversions. (TMDL, Table 4.1.) LRC has commented extensively that this County program has caused unintended adverse effects by increasing storm runoff, thereby entraining sediment from the bed and banks of upland streams, which is then deposited in shallow gradient downstream stream or river reaches.</p>	<p>one program that may be helpful for achieving the TMDL. The County's Conservation Regulations are not referenced as a mitigation measure to reduce potential impacts from the TMDL; the County's program does not address any of the potential adverse impacts that will result from adoption of the TMDL. The TMDL does not in any way approve the creation or operation of vineyards. The TMDL establishes a program to ensure that if discharges occur from the creation or operation of vineyards, they occur in a manner that ensures that water quality objectives will be met.</p> <p>To the extent that there may be impacts from the adoption of the TMDL, those impacts would result from the construction and/or operation of reasonably foreseeable methods of compliance with the TMDL, not from the operation or construction of vineyards themselves. The TMDL merely dictates that when vineyards are built or operated they must include methods to ensure that increases in the discharge of sediment do not occur. Foreseeable methods of compliance may be BMPs, structures or devices that attenuate peak flow, or other methods.</p> <p>The potential impacts from reasonably foreseeable methods of compliance were analyzed by the SF Bay Water Board to the extent possible in this plan-level analysis. The Water Boards are precluded from specifying manner of compliance, (Water Code section 13360), so it could not perform project-level analyses on every project that will be designed in compliance with this TMDL. As individual projects are proposed, the permitting agencies, including the SF Bay Water Board, may have a better idea of the specific methods that will be incorporated into the projects, and, as a result,</p>
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			<p>may better be able to focus more specific environmental review on those individual methods. At this point, however, the SF Bay Water Board appropriately analyzed reasonably foreseeable methods of compliance in the substitute environmental documentation (see staff report at beginning at Page 93), as required by Public Resources Code section 21159, and analyzed potential mitigation measures, potential alternatives, and the costs involved. The SF Bay Water Board’s analysis complied with the requirements of CEQA.</p>
12	LRC (Lippe)	<p>The Regional Board has agreed with LRC that land use changes, particularly from new vineyard conversions, “may have a significant impact on sensitive communities [i.e., listed fish species] that may experience significant impacts from Basin Plan compliance actions.” (RTC, p. 58.)</p> <p>The Regional Board has also agreed with LRC that some vineyard conversions approved by Napa County have “excessively” relied on “engineered drainage to control surface erosion on-site” and thereby “inadvertently caused or contributed to off-site gully erosion at or near the points of discharge from the vineyards.” (RTC, p. 58.)</p> <p>Despite these admissions, the Regional Board continues to reject LRC’s request that it conduct an EIR-level analysis of the County’s program to assess this mechanism of environmental impact of the TMDL’s performance standards. Instead, the Board continues to use a checklist that is akin to a Negative Declaration, in violation of CEQA.</p>	<p>As stated in response to Comment 11, above, land use changes that result from new vineyard conversions are not impacts that might result from the adoption and approval of this TMDL. The TMDL seeks to ensure that if such conversions occur, they will be constructed and operated in a manner that prevents the discharge of excess amounts of sediment. Impacts that may result from vineyard conversions will be the result of different projects, not from the TMDL. As a result, the SF Bay Water Board was correct in its conclusion that it need not analyze potential impacts from vineyard conversions.</p>
13		<p>As a result of LRC’s comments, the TMDL now includes, as a mitigation measure for this potentially significant impact, a performance standard stating: “Effectively attenuate significant increases in storm runoff.” (TMDL, Table 4.1.) Yet the TMDL provides no criteria or “thresholds of significance” for determining when increases in runoff are significant. Thus, the environmental document violates CEQA for three reasons: (1) without this essential information, the project description is incomplete; (2) because the project description is incomplete, the project’s</p>	<p>Please see responses to Comments # 11 and 12, above. The County’s program is not a mitigation measure for the TMDL; as such, requiring the attenuation of significant increases in storm runoff describes one objective of the TMDL; not a way to mitigate the impacts of the TMDL. Thus, the application of CEQA to the TMDL is not as the stated by the commenter.</p>

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		<p>environmental review has been segmented; (3) the Board has illegally deferred the identification of specific feasible mitigation measures to reduce significant impacts. On this last point, where impacts are found to be significant, CEQA may allow the use of a general performance standard in place of specific mitigation measures, but only where it is shown that developing specific mitigation measures is infeasible or impracticable. No such showing has been made here.</p>	<p>In regards to the waiver policy, The Regional Water Board would initiate the stakeholder process after adoption of the TMDL. Although separate from the Napa Sediment TMDL implementation plan, the waiver program will incorporate the load allocations and targets established by the Napa Sediment TMDL as well as other TMDLs. The waiver will undergo a separate CEQA process. Any new regulatory requirements of the waiver will be analyzed at that time and subsequent updates every five years when they are reauthorized.</p>
<p>14</p>	<p>LRC (Lippe)</p>	<p>The Regional Board has acknowledged that it is preparing a “waiver policy” that will establish standards for exempting projects from direct, site specific regulation under the TMDL. LRC has extensively commented that deferring a description of this portion of the project description renders the environmental document inadequate because the project description is incomplete and project’s environmental review has been segmented, in violation of CEQA.</p>	<p>State Board Staff Disagrees. A TMDL sets out a plan for a water body that is not meeting its water quality standards to come into compliance. A TMDL does not set new standards, and it is generally not self-executing. While most TMDLs do require implementation plans, those plans generally set out the methods by which the Water Boards will regulate dischargers to ensure that the discharges do not cause a violation of the applicable water quality standards.</p> <p>Non-point sources of pollution in California must be regulated by Waste Discharge Requirements (WDRs), Waivers of WDRs, or a prohibition on discharges of the waste (Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (State Board, 2004)). As part of its implementation plan, the SF Bay Water Board stated its intent to regulate some of the discharges covered by this TMDL through the adoption of a Waiver of Waste Discharge Requirements. Commenter incorrectly implies that a waiver constitutes the absence of regulation. On the contrary, a Waiver of WDRs regulates in the same manner as a general permit; it covers a category of dischargers or discharges and establishes requirements that are</p>

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			<p>common to all. These discharges do not gounregulated, they simply comply with requirements that are common to all discharges that are covered by the waiver.</p> <p>Similarly, each of these different mechanisms is subject to CEQA, but each in a different way. Since a TMDL is a planning document, it is subject to CEQA in the same manner as any planning-level document. Impacts are general, mitigation measures and alternatives are less specific than they are for a project-level environmental review. In addition, basin planning (which covers most TMDLs) is an activity that is exempt from the preparation of an EIR pursuant to its designation by the Secretary of Resources as a Certified Regulatory Program pursuant to Title 14, California Code of Regulations section 15251(g). As a result, a TMDL must be accompanied by a complete CEQA review, but the documentation that accompanies the TMDL substitutes for the EIR. In addition, the CEQA review that accompanies the TMDL is akin to a tiered EIR, which is programmatic in nature. Like a general plan EIR, the substitute environmental documentation that accompanies a TMDL looks at broad impacts of the plan, reasonably foreseeable methods of compliance, and impacts, mitigation measures and alternatives for those methods of compliance. The environmental documentation that accompanies a TMDL cannot be project specific, because no projects have yet been proposed to meet the specific requirements of the TMDL. Project-specific environmental review must await specific compliance projects that will be proposed by dischargers to comply with the TMDL.</p> <p>In this manner it becomes apparent that the comment misunderstands the regulatory</p>
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			<p>mechanism and the CEQA compliance required at each stage of the TMDL and compliance. The TMDL must include a plan-level environmental review. The SF Bay Water Board's documentation contains just such an environmental review. It states that one approach the SF Bay Board may use to implement the TMDL is to adopt a Waiver of WDRs, which will broadly regulate a specified category of discharges. At the time that mechanism is adopted, it will be subject to a more focused environmental review, specific to the types of discharges it regulates. Contrary to the commenter's assertion, this does not require an EIR-level review at this stage. On the contrary; the SF Bay Water Board has demonstrated its intention to engage in tiered environmental review as the regulatory approach progresses from planning to implementation. Contrary to commenter's assertion, this is an approach favored by CEQA, not prohibited by it. See Title 14, Cal. Code Regs section 15168 et seq.</p> <p>Finally, commenter has not indicated what impacts, if any, could result from the SF Bay Water Board's adoption of the TMDL, and how the Substitute Environmental Documentation (SED) fails to address those impacts. See responses to Comments # 11 and 12, above.</p>
15	LRC (Lippe)	<p>An EIR-Level Analysis of the Impacts of Using the Napa County Conservation Regulations as a Performance Standard is Required...</p> <p>The primary problem is that the focus of the ECP's approved under this program is to reduce surface erosion - and the methods that are used to do that - cross slope ditches; drop inlets and underground pipes, concentrate and rout rainfall off the property as quickly as possible before it can erode the surface...The result is to increase runoff and peak discharge. The effect of this on the environment is</p>	<p>Please see responses to comments No. 11-14 above.</p>

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		<p>devastating. Historical increases in runoff are deeply incising the stream and river channels because increased runoff picks up sediment from stream beds and the river bed...</p> <p>Thus, continuing the peak-runoff status quo will have continuing significant effects on the environment and any increases in peak runoff will cause new significant effects on the environment. Therefore, to devise a performance standard that speaks in terms of attenuating “significant increases” in peak flow is to lose the battle before it starts...</p>	
16	LRC (Lippe)	<p>The State Board is required to comply with CEQA in approving the TMDL. Where impacts of TMDL implementation may be significant, this means preparing a document that is equivalent to an Environmental Impact Report (“EIR”). <i>City of Arcadia v. State Water Resources Control Bd.</i> (2006) 135 Cal.App.4th 1392, 1422-1423. Here, the TMDL environmental document fails to assess the impact of increases in peak flow as a result of the TMDL’s adoption of Napa County’s program of requiring the installation of these engineered drainage facilities.</p>	<p>Please see responses to comments No. 11-14 above.</p>
17	LRC (Lippe)	<p>The TMDL as proposed in May of 2009 included “compliance” with Napa County’s enforcement of its Conservation Regulations as a performance standard for controlling surface erosion. LRC opposed this on several grounds, including that the TMDL’s substitute environmental document did not assess the environmental impact of using this performance standard. In response, the Regional Board revised this performance standard by deleting the word “comply,” but added language stating: “Napa County Conservation Regulations (County Code Chapter 18.108) are effective in the control of excessive rates of sediment deliver resulting from vineyard surface erosion.”</p> <p>This semantic change is superficially appealing, but substantively meaningless, for two reasons. First, by making a factual finding that compliance with Napa County’s enforcement of its Conservation Regulations is effective for controlling surface erosion, such compliance is effectively adopted as part of the surface erosion performance standard. But the issue presented by LRC in past comments and here is not whether Napa County’s enforcement of its Conservation Regulations is effective for controlling surface erosion. The issue is what other unintended effects this</p>	<p>The SF Bay Water Board has already addressed this comment in its response to comments Part II, 2008 Comment Nos. 3.8, 3.14, 3.DJ5, and 3.DJ6 and Part I 2009 comment No. 4.3.</p> <p>State Water Board staff reviewed the SF Bay Water Board’s response to this comment and agrees with the response.</p> <p>Please see Response to Comment 0.1.</p> <p>Also, please see responses to comments No. 11-14 above.</p>

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		enforcement program has on the environment. LRC's previous comments extensively detailed the fact that the County's program has caused unintended adverse effects by increasing storm runoff, thereby entraining sediment from the bed and banks of upland streams, which is then deposited in shallow gradient downstream stream or river reaches. The resulting imbalance between sediment discharge and runoff is discussed further in Dennis Jackson's August 5, 2010 letter (Exhibit 1). This dynamic has devastating effects on the environment.	
18	LRC (Lippe)	Second, LRC has previously and extensively commented that the environmental document must assess these effects, with an EIR-level analysis because implementation of the standard is likely to cause significant runoff impacts. Instead, the RTC pretends that the Basin Plan amendment merely "acknowledges" the existence of the Napa County program and presents an environmental checklist that is functionally equivalent to a Negative Declaration. The RTC argues that the County's Conservation regulations do not specify any particular "means of compliance." (RTC, p. 55.) But the fact that the County's Conservation Regulations "do not specify means of compliance" is immaterial. At this point, the "means of compliance" are a matter of readily available historical record. Since the Conservation Regulations took effect in 1991, an entire consulting industry has arisen to enable vineyard owners to comply, and the consultants who populate this industry have standard, indeed routine, methods of trying to achieve compliance. All of this material is public record and available for the Board to review and evaluate, and much of this material has been submitted in connection with LRC's previous comments on this TMDL.	<p>The SF Bay Water Board has already addressed this comment in its response to comments Part I, 2009 comment No. 4.3.</p> <p>State Water Board staff reviewed the SF Bay Water Board's response to this comment and agrees with the response.</p> <p>Please see Response to Comment 0.1.</p> <p>Also, please see responses to comments No. 11-14 above.</p>
19	LRC (Lippe)	The RTC also makes a legal argument that relies primarily on the Board's certified regulatory program status under CEQA. (RTC, p. 14.) But this argument ignores the case I cited in my previous comments, <i>City of Arcadia v. State Water Resources Control Board</i> (2006) 135 Cal.App.4th 1392, 1422-1423. The import of this case is that the Board's certified regulatory program does not exempt it from preparing an EIR-level analysis of potentially significant project impacts.	Please see responses to comments No. 11-14 above.
20	LRC (Lippe)	The RTC also argues that the environmental documents is not required to evaluate the impacts of specific future projects. (RTC, p. 56.) This is true, but since the TMDL incorporates the County's program wholesale, it should conduct a wholesale review of its	Please see response to comments Nos. 11-14 above

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		environmental impact.	
21	LRC (Lippe)	<p>The RTC's observations that Board staff are personally familiar with many new vineyards approved by the County under this program (RTC, p. 57) cannot substitute for public disclosure of a fact-based assessment of the environmental impact of this performance standard.</p>	<p>The SF Bay Water Board staff response merely stated that SF Bay Water Board staff are familiar with ongoing programs and the vineyard management practices through their involvement in research for the TMDL. The SF Bay Water Board will take this information and research and apply it to the future implementation tools of the TMDL, specifically in reference to the waiver of WDRs. This response was not related to the assessment of environmental impacts and the commenter has confused this with an environmental review.</p>
22	LRC (Lippe)	<p>The TMDL Environmental Document Violates CEQA Because the Project Description is Incomplete and Segmented...</p> <p>The Implementation Measures for Sediment Discharges Associated with Vineyards set forth in Table 4.1 of the TMDL specify the following "Actions" for achieving the identified performance standard...</p> <p>...Thus, for purposes of both ensuring that the TMDL achieves Basin Plan water quality standards and avoiding significant adverse impacts from implementation of the TMDL, the Regional Board is essentially saying "Trust Us" based on the fact that future projects will either undergo project specific review through issuance of Waste Discharge Requirements ("WDRs"), or will have to meet conditions specified in a future WDR waiver policy to avoid project specific review through issuance of WDRs.</p> <p>As LRC has previously pointed out, the problem here is that the Board has not published the future WDR waiver policy. Without the waiver policy, the public cannot evaluate whether the conditions that project applicants will be required to meet to avoid project specific review through issuance of WDRs will be stringent enough to ensure that only projects not needing additional analysis or mitigation measures are allowed within the WDR waiver.</p> <p>Deferring development of the WDR waiver policy violates CEQA because it segments the environmental assessment of the current</p>	<p>Please see responses to comments No. 11-14 above.</p>

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		TMDL, its performance standards, and the measures necessary to meet these performance standards. All of these components constitute one project. Therefore, at this point, the project description is incomplete.	
23	LRC (Lippe)	<p>...The RTC admits that the TMDL does not include (1) any definition of or threshold of significance for the term “significant” in the runoff performance standard (i.e., “Effectively attenuate significant increases in storm runoff.” (RTC p. 12.); or (2) a description of the WDR waiver policy that will determine which projects are subject to or exempt from direct regulation under the TMDL (RTC, p. 11).</p> <p>CEQA does not allow a lead agency to defer a description of an essential component of the project to a date after approval. Otherwise, segmented environmental review would be the norm, rather than illegal. For example, in <i>Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova</i> (2007) 40 Cal.4th 412, the California Supreme Court held that a lead agency under CEQA cannot simply defer the identification of a project’s source of water supply to a later date and thereby avoid its obligation to evaluate the environmental impacts of using the source of the project’s water supply. The court held that even where there is uncertainty, the agency must make a good faith effort to describe the whole of the project, and make a good faith effort to assess the environmental impact of the entire project.</p>	<p>A deferred analysis is not comparable with the SF Bay Water Board’s tiered approach to environmental review – from plan level, to general permit or waiver of WDRs, to project specific environmental review.</p> <p>Please see responses to comments No. 11-14 above.</p>
24	LRC (Lippe)	Here, the Regional Board has made no effort to specify what the word “significant” means in this performance standard or to disclose the waiver policy standards that will allow project developers to avoid direct regulation under the TMDL. With respect to the performance standard the RTC states that “we have not reached a decision yet on numeric expression of the vineyard storm runoff performance standard. (RTC, p. 12.)	Please see response to comments No. 11-14 above and 37 below

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25	LRC (Lippe)	<p>It appears from the RTC that the Regional Board has misconceived the scope of its legal authority, stating: “The Water Board does not have the authority to regulate land use, only to condition discharges from those land uses as needed, to achieve water quality standards.” This is a misconception because this Basin Plan amendment establishes the Board’s authority to require a WDR permit for any change in land use that will result in the discharge of sediment to the Napa River regardless of source, whether from surface erosion or from entrainment of stream bed and bank sediments from increased runoff. Further, no project proponent has a ministerial right to a WDR in these circumstances. Thus, where a project requiring a WDR will cause increases in runoff that are “cumulatively considerable,” the Board has the authority to require compliance with standards that will mitigate this impact.</p>	<p>While the comment is generally correct that the Water Boards may require compliance for any discharges that result from Land Use decisions, it is incorrect to assume that this results in authority to control land use decisions. The Water Boards are given authority to regulate discharges from projects, but they are not given authority to approve or disapprove of the projects themselves, except under limited circumstances that do not apply here.</p> <p>The impacts that may result from the SF Bay Water Board’s TMDL are those impacts associated with the construction or operation of compliance measures, not the discharges that will result from the land use decisions themselves. The Water Boards are not allowing or permitting vineyard conversions; the TMDL instructs that if discharges do result from such decisions they must be result in compliance with water quality standards.</p> <p>Please see responses to comments No. 11-14 above.</p>
26	LRC (Lippe)	<p>With respect to the waiver policy the RTC makes a legal argument that the Water Board’s decision to defer the waiver policy is within its “regulatory prerogative.” (RTC, p. 11.) The RTC provides no fact-based reasons for why the waiver policy is severable from the remainder of the TMDL for purposes of CEQA compliance. Instead it offers up an inapposite analogy, arguing that “when the Water Board adopts a water quality objective through a Basin Plan amendment, it does not and need not simultaneously adopt permits to achieve the new standard.” (RTC, p. 11.) This is non-responsive to LRC’s comment, which is directed at the waiver policy, which is a rulemaking for a general class of projects, not a permit decision on an individual WDR permit application.</p>	<p>Please see response to comments No. 11-14 above</p>
27	LRC (Lippe)	<p>The RTC also contends that the environmental document “analyzes and discloses what it reasonably can.” (RTC, p. 14.) This conclusion is flawed because it is based on the Regional Board’s previous</p>	<p>The SF Bay Water Board Staff Report Page 109 clearly states it’s requirement as follows: “While the Water Board would not directly undertake any</p>

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		<p>decision to exclude from the TMDL these essential project components.</p>	<p>actions that could physically change the environment, adoption of the proposed Basin Plan amendment would result in future actions by landowners, municipalities and other agencies to comply with the requirements of the Basin Plan amendment and these actions 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.”</p> <p>The SF Bay Water Board does not, and cannot, specify manner of compliance with waste discharge requirements according to Water Code §13360.</p>
28	LRC (Lippe)	<p>Instead of providing a description of the WDR waiver policy, the RTC gives a few tidbits of it. For example, the RTC states: “Please note that as a condition of the WDR waivers, staff will propose that the Water Board require compliance with all water rights laws in order to obtain coverage.” (RTC, p. 64.) In another example, the RTC states: “as a condition of the WDR waiver program for vineyards, we will propose BMP effectiveness monitoring to evaluate vineyard development and management on storm runoff peak and volume ...” (RTC, p. 65.) As mitigation measures, these “intentions to propose” are ineffective because they are not enforceable. As a description of the WDR waiver policy, it is incomplete.</p>	<p>Please see response to comments No. 11-14 above</p>
29	LRC (Lippe)	<p>The TMDL Environmental Document Violates CEQA Because the Project Description is Uncertain Regarding the Geographic Scope of the Project.</p> <p>The geographic scope of the Project, i.e., whether it will be applied to areas upstream of municipal reservoirs, is uncertain. The RTC states that “we will consider these and other resource protection issues in determining the geographic scope and requirements for the WDR waiver programs ...” (RTC, p. 61.)</p>	<p>The Regional Board has been consistent with its project description throughout the TMDL and included it in the introduction to the CEQA checklist as follows:</p> <p><i>“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</i></p>

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			<p><i>throughout the watershed. Napa River watershed land uses include a mix of open space, agricultural, commercial, residential, and municipal uses. (Final Staff Report Page 94)”</i></p> <p>The SF Bay Water Board has already addressed this comment in part in its response to comments Part II, Comment 3.DJ1 where it elaborates on its reasoning for not including the land areas upstream of municipal reservoirs in the geographic scope. Their response is as follows:</p> <p><i>“Because all five municipal dams are complete barriers to steelhead and salmon migration, absent dam removal, there is no potential habitat for anadromous salmonids upstream of these dams. Also, because all municipal reservoirs are very large, essentially all sand discharged into them is deposited therein. Therefore, sand delivery to channels from land areas located upstream of the municipal reservoirs does not exert a measurable effect on the sand concentration in channel reaches downstream of these dams, and hence does not influence sand concentration in the Napa River or tributary reaches that provide potential habitat for anadromous salmonids.</i></p> <p><i>While we agree that all water bodies and beneficial uses in the watershed must be protected, including municipal water supply and cold freshwater habitat upstream of municipal dams, this is not the focus of this TMDL and Basin Plan amendment.”</i></p> <p>State Water Board staff reviewed the SF Bay Water Board’s response to this comment and agrees with the response.</p>
30	LRC (Lippe)	An EIR-Level Analysis of the Impacts of Incorporating the Division	Please see responses to comments No. 11-14

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		<p>of Water Rights' Appropriative Permit Program is Required.</p> <p>The TMDL implementation program also incorporates the Division of Water Rights' appropriative permit program and its <i>Policy for Maintaining Instream Flows in Northern California Coastal Streams</i>. (See Table 5.2, Resolution R2-2007-0011. Exhibit A, p. 1768.) As described by Dennis Jackson, the Division of Water Rights' appropriative permit program causes significant adverse impacts to the beneficial uses of water in the Napa River watershed (see Jackson letters dated July 2 and July 5, 2009 and as shown by Patrick Higgins (see Higgins letter dated July 2, 2009), this state of affairs is expected to continue into the foreseeable future. For this reason, an EIR level analysis of this mechanism of impact is required.</p>	<p>above.</p>
<p>31</p>	<p>LRC (Lippe)</p>	<p>THE TMDL WILL NOT ACHIEVE WATER QUALITY STANDARDS OR PROTECT BENEFICIAL USES...</p> <p>The TMDL will not achieve the goal of achieving water quality standards and protecting beneficial uses for a number of reasons, specifically including: (1) it does not effectively regulate increases in storm runoff resulting from changes in land uses (see comment letter from Dennis Jackson dated August 5, 2010); and (2) it does not regulate groundwater extractions or surface water diversions that contribute to "widespread decline in baseflow persistence and magnitude in the Napa River and the lower reaches of its tributaries." (RTC, p. 20.)...</p> <p>The RTC argues that the Basin Plan cannot include any standards relating to groundwater use because the Board has limited authority to require permits for groundwater extraction. (RTC, p. 20.) This is non-responsive and misses the crucial point. While LRC recognizes that the Board cannot require a permit for groundwater extraction except in certain limited circumstances, this Basin Plan amendment establishes the Board's authority to require a WDR permit for any change in land use that will result in the discharge of sediment to the Napa River. No project proponent has a ministerial right to a WDR in these circumstances. Thus, where a project requiring a WDR includes groundwater extraction and such extraction will cause or exacerbate sediment impacts on the Napa River, the Board has the authority require compliance with standards that will</p>	<p>It is clear that commenter disagrees with the SF Bay Water Board regarding the efficacy of the TMDL. The SF Bay Water Board found that the TMDL will result in the attainment of water quality standards. State Board staff agrees with the SF Bay Water Board and recommends approval of the TMDL.</p>

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		mitigate such groundwater extraction impacts. In short, the RTC is incorrect regarding the scope of the Board’s regulatory authority over groundwater extraction in the context of this TMDL.	
31	LRC (Lippe)	LRC has extensively commented on these issues in its comment letters listed above. It is worth noting that at the September 9, 2009 Regional Board hearing on this TMDL, Mr. Napolitano conceded that the TMDL may not conserve the salmonid fisheries in the Napa River drainage. This is a striking admission considering that the listed salmonid species in the Napa River are a principal beneficial use that the TMDL is intended to protect. This does not sound much like the “margin of error” the TMDL is required to include to ensure its success.	Comment Noted.
32	LRC (Lippe)	In addition, Dennis Jackson’s July 2, 2009 and July 5, 2009 letters discuss the facts that (1) the TMDL does not include in its analysis existing impoundments and reservoirs, including illegal ones, that function as impervious surfaces and therefore contribute to runoff, when full; and (2) the TMDL does not factor in groundwater withdrawals that reduce base stream flows. The RTC argues that the Basin Plan cannot include any standards relating to groundwater use because the Board has limited authority to require permits for groundwater extraction. (RTC, p. 20.) This is non-responsive and misses the crucial point. While LRC recognizes that the Board cannot require a permit for groundwater extraction except in certain limited circumstances, this Basin Plan amendment establishes the Board’s authority to require a WDR permit for any change in land use that will result in the discharge of sediment to the Napa River. No project proponent has a ministerial right to a WDR in these circumstances. Thus, where a project requiring a WDR includes groundwater extraction and such extraction will cause or exacerbate sediment impacts on the Napa River, the Board has the authority require compliance with standards that will mitigate such groundwater extraction impacts. In short, the RTC is incorrect regarding the scope of the Board’s regulatory authority over groundwater extraction in the context of this TMDL.	<p>The SF Bay Water Board has already addressed addressed similar comments in its response to comments Part I, 2009 comment No. 4.DJ5.</p> <p>The commenter has failed to state how those comments were inadequate.</p> <p>State Water Board staff reviewed the SF Bay Water Board’s response to this comment and agrees with the response.</p> <p>Please see Response to Comment 0.1</p>
33	Living Rivers Council (Dennis Jackson)	The goal of the TMDL is to reduce the sediment load ... to 125% of the natural load. In addition ... the TMDL and Basin Plan Amendment (BPA) should require that the stormwater discharge ... be brought into alignment with the natural hydrograph that would transport no more than 125% of the background sediment load. I first discuss the geographic scope of the TMDL and Basin Plan	While the primary goal of the TMDL is an overall reduction in the sediment load, the objectives for the Basin Plan amendment (BPA) are broader, also including a program of habitat enhancement to support conservation of native fish populations.

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		Amendment (BPA). Next, I review my July 2, 2009 comments ... and then discuss why the ... September 2009 Response to Comments do not adequately address my concerns	
34	LRC (Jackson)	The TMDL and BPA do not have a clear statement of their geographic scope. The TMDL and BPA have gone through several versions. Initially, the lands upstream of the municipal water supply reservoirs were excluded from compliance with the performance standards and reporting requirements. Currently, it appears ... all lands within the ... watershed are subject to ... performance standards and reporting It appears that currently only the stream channels downstream of the municipal reservoirs are subject to the numeric targets presented in Table 1 of the BPA. Clearly stating the geographic scope of the TMDL and BPA will avoid any confusion for landowners.	<p>Please see response to comment No. 29 above</p> <p>In addition, the primary vehicle for achieving the Napa River sediment TMDL are the actions called for under the WDR waiver programs specified in Tables 4.1 to 4.4 of the Basin Plan amendment. However, the sediment TMDL is not the only pollutant control objective that will be addressed by the WDR waiver programs. Other objectives include control of excessive discharges of heat, storm runoff, nutrients, and pathogens, as needed to address other impairment listings and pollutant concerns in the Napa River and Sonoma Creek watersheds. Given these considerations, the geographic scope for the WDR waiver programs may in fact be larger than would be needed solely to address the Napa River sediment TMDL. The geographic scope of the WDR waiver programs is not a SF Bay Water Board staff decision however, it is one for the SF Bay Water Board to make based on staff recommendations and input from stakeholders, as part of the public process associated with development and approval of the WDR waiver programs. The Living Rivers council is certainly welcome to participate in the process as it has with the Napa River TMDL.</p>
35	LRC (Jackson)	The TMDL will not be achieved because proposed performance standards and actions will not be effective in controlling all significant sources of anthropogenic increases in storm runoff.	<p>The SF Bay Water Board has already addressed this comment in its response to comments Part I, 2009 comment No. 4.DJ1.</p> <p>State Water Board staff reviewed the SF Bay Water Board's response to this comment and agrees with the response.</p> <p>Please see Response to Comment 0.1</p>
36	LRC	The Napa River will remain out of balance if the sediment load in	Please see response to Comment No. 35 above,

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<p>(Jackson)</p>	<p>the Napa River is reduced to 125% ... but the discharge regime remains significantly above the discharge that transports 125% of the natural sediment load. Reducing the discharge until it is in conformance with the target sediment load of 125% of the natural load will ensure that the sediment load will remain within the target range over an extended time period. The amplified storm discharge in the Napa River is the result of several processes and is an excellent example of a cumulative impact. That is, individual changes in land use may have resulted in small changes to storm discharge but when all changes to land use are considered a significant change to discharge has occurred. ... To bring the storm hydrograph of the Napa River into alignment with a hydrograph that transports 125% of the natural sediment load requires a reduction in the storm discharge from roads, vineyards, grazing land, urban areas, rural residential areas and other land uses.</p>	<p>and also note the following additional information pertaining to control of storm runoff from roads, and the problem of forest conversion:</p> <p><u>Storm runoff from roads:</u> The actions required to achieve a 50 percent reduction in sediment delivery from roads also will be effective in reducing storm runoff. The rationale is as follows:</p> <p>Dirt roads comprise approximately 85-percent-or-more of all roads in the Napa River watershed (Staff Report, Water Board, 2009). A large fraction of the total estimated sediment delivery from roads, results from erosion of the road surface and inboard ditch on dirt roads. The most cost effective methods for treating these sediment sources involve out-sloping the road surface, and/or installing rolling dips on the dirt roads. Both of these treatments also are quite effective in dispersing, slowing, and infiltrating storm runoff. Therefore, the SF Bay Water Board expects to achieve reductions in road related runoff as a side benefit of the actions to reduce sediment delivery.</p> <p><u>Forest conversion:</u> Forest conversion to vineyards has caused locally significant increases in runoff and in those cases often contributed to local gullying of channel reaches. However, in their comparison of vegetation cover observed on 1940s and recent aerial photographs, SF Bay Water Board staff could not conclude that the percentage of forest cover for the Napa River watershed as a whole has been decreasing. In two sub-watersheds where quantitative comparisons of this type have been performed (in Sulphur and Carneros Creek), scientists have concluded that the area of forest and/or woodland cover has been stable or</p>
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<p>37</p>	<p>LRC (Jackson)</p>	<p>BPA Table 4.1 requires that vineyards comply with the following discharge performance standard:</p> <p>Effectively attenuate significant increases in storm runoff. Runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion. This performance standard is not enforceable as written...</p> <p>...The discharge performance standard does not provide a measure for significance in the phrase "...shall not cause or contribute to downstream increases in rates of bank or bed erosion." Nor, does the discharge performance standard define a time reference for increase in rates of bed or bank erosion. Does this mean that if <i>any</i> bank or bed erosion occurs then <i>all</i> of the upstream vineyard owners failed to comply with the discharge performance standard?</p> <p>The vagueness of the proposed discharge performance standard makes it impossible for the Regional Board or a vineyard owner to know if he/she has "Effectively attenuated significant increases in storm runoff." The vagueness of the discharge performance also makes it impossible for the Regional Board or a vineyard owner to know if she/he has contributed to downstream increases in the rates of bed or bank erosion.</p>	<p>The measure of significance for the vineyard storm runoff performance standard is:</p> <p>"so that runoff ... shall not cause or contribute to downstream increases in bank or bed erosion" (Table 4.1, Basin Plan amendment, 2009).</p> <p>Compliance shall be evaluated through: a) field inventories of vineyard sites; b) review of available information (e.g., property history, vineyard design and management practices, mapping of natural and engineered drainage features, soil and geologic mapping, and topographic mapping); and c) field observations of channel condition in channel reaches draining onto the property, at the point(s) of discharge immediately from the vineyard, and in the first downstream response reach (e.g., gravel-bedded channel reach with a streambed slope ≤ 0.02).</p> <p>Evidence of active down-cutting or head-cutting, and/or anomalous patterns or intensity of bank erosion (e.g., extensive bank erosion along one or both banks), at/near the point of discharge or in the first downstream response reach will be interpreted to indicate that the upstream vineyard may be contributing to damaging increases in bed and/or bank erosion. In such cases, the landowner and/or manager will be required to implement actions to facilitate recovery of channel habitat structure and balanced fine and coarse sediment budgets in the unstable channel reach. The details of the SF Bay Water Board analytical approach will be developed in consultation with a Technical Advisory Committee that has been formed to assist SF Bay Water Board with technical issues related to</p>

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<p>38</p>	<p>LRC (Jackson)</p>	<p>Approach to Determine Numeric Discharge Performance Standard...</p> <p>The goal of the TMDL and BPA is to reduce the sediment load to 125% of the natural background load. Merely reducing the sediment load will not correct the imbalance between the sediment transport capacity and the sediment load. Reducing the sediment load to 125% of background in the Napa River and its tributaries requires reducing the discharge in a manner that will transport no more than 125% of the natural sediment load. This suggests an approach that could provide the precision required to have an enforceable discharge standard.</p> <p><i>The commenter suggests using a power function of water discharge to estimate the sediment load for the Napa River.</i></p> <p>A possible approach to this problem is to consider that the discharge observed during the 1994-2004 base period carried 185% of the natural sediment load. It is possible to estimate what discharge characteristics would have been required to transport 125% of the natural sediment load during the 1994-2004 period. Then, the discharge regime that transports no more than 125% of the natural load could be compared to the discharge regime for the 1994-2004 timeframe. The amount the observed discharge would have to be reduced could then be determined for the 1994-2004 discharge regime. It is common practice to estimate the sediment load of a river using a power function of water discharge as in Equation 1</p> $L = aQ^b$ <p>Where L is the sediment load, Q is the water discharge and “a” and “b” are empirical constants. The literature contains range for the exponent b in Equation 1. Leopold (Page 180, <i>A View of the River</i>, 1994) notes that the range of b is typically 2 to 2.5. Others have suggested that the exponent b can range from 1.5 to 2.5...</p> <p>...I have not analyzed the sediment load data collected by the USGS, or others, for the Napa River. Fitting the existing sediment data for the Napa River to Equation 1 will determine what value of the exponent b in Equation 1 is most realistic for the Napa River.</p>	<p>development of the WDR waiver.</p> <p>The commenter suggests that anthropogenic increases in storm runoff must be reduced in order to achieve the TMDL, and that progress in the effort to reduce sediment delivery and runoff should be measured. State Board Staff agrees.</p> <p>As such, The SF Bay Water Board has proposed performance standards for all of the land uses (significant sources of anthropogenic increases in sediment delivery and storm runoff) including those for: vineyard surface erosion and storm runoff; residual dry matter in grazing areas; and sediment delivery from roads.</p> <p>The analytical approach the commenter presents involves a power function relationship between streamflow discharge and sediment transport rate or yield to estimate necessary reduction in runoff to achieve the TMDL. However, based on the information provided, it's not possible to determine the accuracy of the commenter's estimate of the reduction in the magnitude of storm runoff that may be required to achieve the TMDL.</p> <p>Another more practical problem, is that the flow duration curve for the Napa River will vary as a function of climactic cycle, natural succession of vegetation communities, and also land use practices and level of development. For these reasons, it would be difficult to detect a decrease in land use related runoff even if it should occur.</p> <p>Furthermore, the estimated value of 15-to-18 percent for necessary reduction in runoff is not much greater than the minimum value for error in estimation of streamflow magnitude during storm conditions, which is 10-to-15 percent utilizing the best available technologies and methods for</p>
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		<p>Focusing on the range of values of exponent b suggested by Leopold, that is b in the range of 2.0 to 2.5, Table 1 suggests that the required reduction in discharge in the Napa River at Soda Creek is in the range of 15% to 18%, a small range. The above analysis should be applied to produce a numerically quantified discharge performance standard.</p>	<p>streamflow gauging (Sauer and Meyer, 1992).</p> <p>For these reasons, the SF Bay Water Board chose to develop a monitoring program to evaluate the effectiveness of management practices at the source/site of potential increases in runoff. It would be more straightforward to monitor storm runoff characteristics on paired vineyard and grazing sites, and that we would have a much greater probability of detecting management effects at the point of discharge than at a downstream site, where this influence may be muted. Such monitoring also has the advantage of also shedding light on the effectiveness of BMPs, retrofits, and/or management practices that will/are being implemented to reduce runoff and promote to greater infiltration.</p>
39	LRC (Jackson)	<p>Apply (the) discharge performance standard to all land uses. ... Applying a discharge performance standard only to vineyards ignores the fact that other land uses in the Napa watershed have significantly contributed to the increased storm runoff. To effectively reduce storm runoff, a storm discharge performance standard should be required for all land uses that generate excess sediment</p>	<p>Please see comment Nos. 34-35</p>
40	LRC (Jackson)	<p>Staff's response to Comment 4.DJ1 does not address increased discharge from Rural Lands (BPA Table 4.3). Footnote 3 in BPA Table 4.3 provides the following definition of Rural Lands:</p> <p>Rural lands, per Napa County definition include: non-farmed and non-grazing 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 secondary vineyard, orchard, and/or grazing.</p> <p>The definition of Rural Lands is troubling because it appears that it could exclude large vineyards on parcels included within this classification from requirements to control storm runoff and sediment delivery.</p>	<p>The intent was not to suggest that some vineyards ≥ 10 acres would be excluded from compliance with surface erosion and storm runoff performance specified in Table 4.1, as a fortuitous coincidence of being part of larger parcel that has been classified as "Rural Lands" by the County.</p> <p>Instead, the BPA will require that discharges from all vineyards support attainment of water quality objectives for sediment, and other pollutants of concern: heat, peak runoff, and nutrients.</p> <p>With regard to road discharge performance standards, please also see our response to</p>

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		<p>This definition of Rural Lands is troubling. There is no definition of, "...secondary vineyard, orchard and/or grazing." These "secondary" activities can occur on parcels that are 10 acres or greater. Therefore, these activities could involve more than 10 acres and still meet this definition. Why should a sizeable "secondary" vineyard not be subject to the same regulations as a vineyard regulated under BPA Table 4.1? I propose that any vineyard, orchard or grazing, on Rural Lands, that exceed 1.0 acres be subject to the requirements set forth in BPA Tables 4.1 and 4.2.</p> <p>Rural Lands are larger parcels that provide for a variety of land uses including rural residential. The land use activities of Rural Lands can generate increased runoff and elevated sediment loads. The following performance standards from BPA Table 4.3 apply to Rural Lands.</p> <p>Roads: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period.</p> <p>Gullies and/or shallow landslides: Accelerate natural recovery and prevent human-caused increases in sediment delivery from unstable areas.</p> <p>The literature is filled with studies that document the fact that roads increase storm discharge. The amount of the increase in runoff and the road density required for a measurable increase in runoff to be detected varies with geology and precipitation regime. Since roads generate both additional sediment and discharge, it is necessary to set performance standards for both sediment production from roads and for the generation of increased storm discharge from roads. In addition, other activities on Rural Lands can generate increases in storm runoff. Therefore, I propose that an enforceable discharge performance standard also be applied to Rural Lands.</p>	<p>Comment No. 35 above.</p>
<p>41</p>	<p>LRC (Jackson)</p>	<p>Environmental Impact of TMDL and BPA</p> <p>The proposed TMDL and BPA have the potential to create adverse environmental impacts if implemented in their current form. The TMDL and the BPA will reduce the sediment load of the Napa River and its tributaries but only seek to reduce excess storm discharge from vineyards....</p>	<p>Please see responses to Comment Nos. 34-36 above.</p>

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42	<p>In my July 2, 2009 comments, I submitted an analysis of readily available reports and groundwater data demonstrating that it is likely that widespread groundwater pumping is diminishing the magnitude and persistence of dry season baseflow. Staff's response to my evidence that widespread groundwater pumping is decreasing dry season baseflow is quoted below.</p> <p>Stronger action is required for this important topic. The State Board could take action to determine if any groundwater pumping is decreasing the underflow of the Napa River. The BPA and Table 5.2 could be amended to include statements that the affect of groundwater pumping on dry season flow in the Napa River shall be further studied and shall be discussed in the agency meetings called for in Action 2.1 from BPA Table 5.2.</p>	<p>Please see response to comment No. 32 above.</p> <p>In reference to the State Board action on groundwater pumping, this is at the State Board's discretion as it sees fit. State Board Staff defers to the Regional Boards discretion in not including this in thier Basin Plan Amendment.</p>
43	<p>Summary</p> <p>In addition to reducing the sediment load to 125% of the natural background sediment load the TMDL and BPA should require that the stormwater discharge regime of the Napa River be brought into alignment with the natural hydrograph that transports no more than 125% of the background sediment load. An enforceable storm water discharge performance standard shall be applied to all four land use categories listed in BPA Tables 4.1 through 4.4. The storm water discharge performance standard should be applied to all lands in the Napa River watershed including upstream of the municipal water supply reservoirs.</p> <p>Reducing the sediment load from 185% down to 125% of the natural sediment load without actively reducing excess storm discharge from all land uses in the Napa watershed will create an imbalance between the target sediment load of 125% of the natural load and the sediment transport capacity of the Napa River and its tributaries. Such an imbalance has the potential to result in erosion of the banks and/or bed of the Napa River and its tributaries. Therefore, implementing the current version TMDL and BPA, as written, has the potential of causing erosion of the banks and/or bed of the Napa River and its tributaries.</p> <p>I have demonstrated a procedure to determine the amount the water discharge of the 1994-2003 period needs to be reduced so</p>	<p>Comment Noted. Please see responses to comments above.</p>

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		<p>that the resulting sediment load is 125% of the natural load. The required reduction in water discharge appears to be in the range of 15% to 18%. The actual required reduction in the water discharge can be calculated by fitting existing sediment transport data to Equation 1. A numeric discharge performance standard can then be applied to all land uses in the Napa River watershed.</p> <p>Valley-wide groundwater extraction rates are currently high enough to lower the groundwater table below the bed of the Napa River and change it into a losing stream. The loss of streamflow to the groundwater system can adversely affect the growth of salmonid juveniles. In some locations, the loss of river flow to the groundwater system may be sufficient to dry up portions of the riverbed. The goal of enhancing salmonid habitat in the Napa River will not be achieved if the lowering of the groundwater surface by valley-wide groundwater pumping is not accounted for.</p>	
44	Living Rivers Council (Pat Higgins)	<p>Water Board (SF Bay Water Board) staff took issue with assertions in my previous comments with regard to Pacific salmon status and trends in the Napa River.</p> <p>Coho salmon: Water Board staff asserts that coho salmon were lost from the Napa River in the 19th Century because of a dam on the mainstem at Trancas Road that was demolished in the 1930s. Figure 1 is a gradient map from Stillwater and Dietrich (2002) that has been modified to show optimal gradient for coho salmon (< 2%) and also includes the approximate location of the old dam. It is clear that many miles of optimal habitat below the dam in creeks like Redwood, Carneros, Huichica, Murphy, Tulucay and Sarco would have remained accessible and could have provided for sufficient spawning and rearing habitat to have maintained the Napa River coho salmon population into the 20th Century.</p> <p>Spence et al. (2005) found the Napa River to have 466 kilometers (km) of high intrinsic potential (IP) coho salmon habitat and by far the largest extent of such habitat would have been on the valley floor. Side channels and beaver ponds cool with ample cool water due to hyporheic connections would have provided a huge amount of habitat prior to disturbance. Of all rivers in the Central California Coast Evolutionarily Significant Unit (ESU), only the Russian River and Gualala River have more extensive high IP coho salmon habitat</p>	<p>This is correct, there are a few tributaries that join the Napa River in its tidal reach, that were not blocked by the former water supply dam that was located (from the 1870s through the 1930s) on the Napa River near Trancas Avenue. The SF Bay Water Board Staff could have been more precise in their earlier responses, but it does not undermine the fact that the location of former dam would have been disastrous to the coho and Chinook salmon populations in the Napa River watershed.</p> <p>SF Bay Water Board Staff agree that it appears that the dam blocked access to the vast majority of the potential habitat for coho salmon in the watershed for more than sixty years. As such, SF Bay Water Board have inferred that the coho salmon run would have been dramatically reduced, placing a remnant population, if still present through the 1930s, at a much greater risk of extirpation. We also note that Redwood Creek is the only tidal tributary possessing all of the classical attributes of a coho stream including abundant rainfall and a closed canopy forest dominated by coast redwood and Douglas fir in</p>

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		<p>(Spence et al. 2005).</p> <p>NMFS not choosing to include the Napa River in the CCC likely has more to do with politics or their professional opinion about the ability to recover coho salmon than potential historic productivity. Since all other populations of coho salmon in the San Francisco Bay have been extirpated and there are no other nearby source populations from which to draw gene resources, I agree that Napa River coho salmon are not likely recoverable.</p>	<p>its headwaters and canyon reaches.</p> <p>However, State Board Staff cannot negate or agree with this comment that Coho Salmon are not recoverable since it is indeed a listed species that must be protected as a beneficial use.</p>
45	LRC (Higgins)	<p>Chinook salmon:</p> <p>“The impacts to Chinook salmon from the historic dam ... were likely greater than those to coho salmon because smaller tributaries below the dam would have been less suitable for spawning of the larger species. Therefore, the Water Board staff assertion that the dam may have eliminated native Chinook salmon runs has more merit. Erratic patterns of abundance, as reflected by Napa County Resource Conservation District (NCRCD 2009, 2010) downstream migrant trapping results (Figure 2 & 3), indicate that the population is not stable or secure. Only one Chinook salmon downstream migrant was trapped in 2009, but there were 1520 juveniles captured and counted in 2010. Very low flows in late 2008 and early 2009 may have lead to very low Chinook salmon spawning and the lack of downstream migrants trapped. The 2010 water year allowed greater potential for access and had higher counts. Water Board staff mention genetic studies to determine whether Napa River Chinook salmon are hatchery strays and results from such studies should be shared expeditiously when available.</p>	<p>Comment Noted.</p> <p>The fact that the Chinook salmon population is not stable or secure is well known and documented.</p> <p>Proposed fine sediment control, flow protection, fish passage, and riverine habitat enhancement projects (throughout a 13.5-mile reach of the mainstem) are proposed in part to increase Chinook salmon smolt production and fitness, as called for to support a self-sustaining independent population. Please note that with regard to suggested genetic analysis, that the RCD as part of its salmonid population monitoring program is collecting tissue samples that have been submitted to Carlos Garza at the NOAA Fisheries Science Center in Santa Cruz. When the data becomes available, the RCD plans to report these findings.</p>
46	LRC (Higgins)	<p>The RCD ... downstream migrant trap ... will provide an excellent basis for developing population estimates of steelhead in the future. The first two years of results ... show that steelhead production is relatively low and highly variable. The RCD captured 128 steelhead smolts and 910 young of the year in 2009, but total ... juveniles captured in 2010 was 388.” The small number of fish marked and ... the low recapture rate do not allow for [steelhead smolt] population estimation and greater effort ... in this regard is needed.</p> <p>The capture of only 388 juveniles in 2010 is likely indicative of low carrying capacity for older ... juveniles during the 2009 water year</p>	<p>State Board Staff agrees with your opinion regarding the value of smolt trapping, and your enthusiasm for the program started by the RCD is appreciated.</p> <p>With regard to the number of smolts captured, please note actual numbers were 119 in 2009, and 224 in 2010 (Table 5, page 10, RCD, 2010). Staff disagrees that the number of juvenile steelhead captured provides a sound basis for inferring the carrying capacity (or population)</p>

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	<p>when flows were very low. This is consistent with concerns raised in previous comments Dewberry (2001, 2003) organized dive counts of steelhead juveniles in many Napa River tributaries in 2001 and 2002 and found that only Dry Creek had consistently high juvenile steelhead standing crops (> 1 fish/meter² for >500 meters) in both years. ... Even in watersheds where Dewberry (2001, 2003) found high concentrations of steelhead ..., there were many reaches in the same creeks with low or no steelhead Only 9% of reaches had high concentrations of steelhead in 2001, which was a severe drought year, but these highly productive reaches expanded to only 19% of habitat surveyed in 2002 [an average water year]. This indicates that even in good years that 80% of tributary habitat surveyed was marginally functional or non-functional. As mentioned in previous comments, the mainstem Napa River was formerly a very important nursery area for older age juvenile steelhead (Anderson 1969) that are most likely to survive to adulthood and that habitat is now completely non-functional for rearing. Therefore, all indications are that lack of older age steelhead rearing habitat is limiting the population ... 2010 downstream migrant trap results show the influence of low water years in depressing smolt production. Juvenile steelhead dive counts by the RCD in spring and fall of 2007 on York Creek show a pattern of substantial reduction in [juvenile steelhead] density except in pools, which indicates that flow depletion reduces seasonal and annual carrying capacity (Figure 4). This is likely a characteristic pattern throughout the basin and shows pervasive problems with over allocation of water. Although Water Board staff proposes a solution to flow problems through cooperative efforts with other agencies, additional development of vineyards will be permitted under the TMDL if they comply with sediment mitigation measures embodied in Napa County ordinances and Fish Friendly Farming methods. Any additional vineyard development will increase water demand and further diminish steelhead habitat (see Cumulative Effects).”</p>	<p>throughout the watershed of older//large juveniles. A large proportion of larger/older juvenile steelhead would not be sampled, if they did not migrate into the estuary from tributary rearing sites. At a minimum, more would need to be known about the relative proportion of older/larger juveniles that decided to remain in the tributaries to develop an accurate estimate of the total watershed population in this size class. The smolt data is a much more reliable metric for evaluating carrying capacity for larger/older juveniles. Considering the trap efficiency estimate for 2010, smolt production is estimated at approximately 2000 ± 700. Because of very low recapture rates and fewer days of trapping in 2009, smolt production estimates for 2009 are subject to very large potential errors (e.g., a best estimate of approximately 2500 smolts ± 2800, Table 8, Page 15, RCD, 2010). The improvements made in 2010 and resulting significant reductions in potential error in estimating smolt production are encouraging. If this performance can be maintained over a 10-year period, the SF Bay Water Board will have a solid basis for evaluating the status of the Napa River watershed steelhead population.</p> <p>Dewberry (2001 and 2003) reports the results of sampling in a critical dry year, water year 2001, and an average runoff year, water year 2002. This data is useful for comparing between reaches and years. However, the sampling design and limitations of access make it impossible to extrapolate the juvenile population for the watershed, and the author has cautioned against doing this (Dewberry, personal communication with SF Bay Water Board staff, 2003). Also, because steelhead density was not reported by size class, it’s not possible to infer density of older/larger juveniles by reach. The</p>
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			<p>density of these larger/older juveniles correlates much better with smolt production than does the overall density of all juveniles, the vast majority of which are young-of-the-year. Dewberry (2003) is most useful for identifying “hot spots” or refugia, around which protection and restoration measures should be anchored. Interestingly, the percentage of reaches sampled with high density in the Napa River watershed is similar to the Siuslaw River and Knowles Creek, also which are reported in Dewberry (2003). These two streams, both in Oregon, are much wetter than Napa. The fact that they also have very low percentages of reaches where juvenile density is high, suggests even in Napa, that low summer flows may not be the primary control on smolt production in some or all years. Please also note since the time of Dewberry’s surveys, significant fish passage projects have been completed in: lower York Creek; Heath Canyon Creek; and Bear Canyon Creek. These projects have opened up several miles of very high quality spawning and rearing habitat.</p> <p>With regard to the juvenile steelhead sampling results for the spring and fall of 2007 in York Creek, one would expect a natural reduction in the juvenile standing crop to occur over the course of the dry season (Gasith and Resh, 1999). Again, it would be more informative to evaluate the density of the older/larger size class, which will dominate the subgroup that becomes smolts in the following year. Even in very wet years including water year 2005 which provided the highest summer flows on record for the Napa River watershed, the density of young of the year, which represent 80 percent or more of the total juvenile population in almost all streams, was greatly reduced during the dry season (Table 9, Page 16, Stillwater Sciences, 2007).</p>
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			<p>Interestingly, the density of larger/older juveniles did not change.</p> <p>In summary, with regard to steelhead smolt production, staff agrees there are good reasons to be concerned about the potential consequences of low flows and water withdrawals in the Napa River watershed. However, the data and arguments presented are not sufficient to confirm or reject a hypothesis that low summer flows control smolt production from the Napa River watershed. It is equally plausible that limitations of winter refuge habitat, spring baseflow, or limited access to otherwise suitable habitat are more important. The steelhead growth study prepared by Stillwater Sciences (2007) suggests that flow conditions in the spring and availability of winter refuge habitat may be more important controls on smolt production in at least some years.</p>
47	LRC (Higgins)	<p>Fish Community Structure: The downstream migrant trap results show that warm water adapted species, such as the California roach are more numerous than salmonids, which is an indication of temperature impairment of the mainstem Napa River. Non-native fishes are numerous and diverse. Stillwater and Dietrich (2002) pointed out that the decreasing trend in salmonids in the Napa River has been accompanied by an increase in non-native warm water adapted species. That trend appears to be continuing. This is problematic because these fish not only compete for food and space with salmon and steelhead juveniles but also likely predate upon them. Occurrence of chum and possibly pink salmon juveniles in the 2010 downstream migrant trap catch indicates there may be a possible remnant population. Genetic work on these fish would be of interest in determining the origin of these fish.</p>	<p>With regard to fish community structure, the commenter does not provide a rationale to support the inference that catching many more California roach than salmonids indicates temperature impairment. The commenter also states that “non-native fishes are numerous and diverse.” This does not agree with the Napa River trapping data, where native fishes accounted for over 97 percent of the catch (RCD, 2010). With regard to the analysis presented in Stillwater Sciences and Dietrich (2002), although the commenter is correct in stating that authors inferred a decrease in salmonid abundance over time, they did not conclude that non-native warm water species are increasing (see Figure 3-6, Stillwater Sciences and Dietrich, 2002). The proportion of fish surveys where this fish guild was encountered has remained stable since the 1960s. Similarly,</p>

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			<p>the proportion of native warm water fishes has remained stable, and the percentage of native cold water fishes has increased through time. Please also note that the RCD did submit tissue samples to Carlos Garza at NOAA Fisheries from the fish identified as chum and possible pink salmon for genetic analysis.</p>
<p>48</p>	<p>LRC (Higgins)</p>	<p>Issues of Protection by TMDL of Areas Upstream of Reservoirs</p> <p>Water Board staff reject Jackson’s (2009) argument regarding the need to enforce TMDL ... above reservoirs to control increased peak flows stating that the reservoirs have the ability to capture flows and shave flood peaks. However, in other sections of the response to comments Water Board staff admits that the reservoirs are not operated for flood control and often pass flows through in late winter. Consequently, concerns about peak flow effects from lands upstream of reservoirs and bed incision of tributaries and the lower mainstem Napa River are valid and remain unresolved.</p>	<p>State Board Staff disagrees and feels that SF Bay Water Board Staff’s comments were adequate. The SF Bay Water Board Staff response to comments Part I, 2009 comment No. 4.DJ1. states as follows:</p> <p>“Third, the commenter asserts that storm runoff quantity from vineyards and other sources of increased runoff located upstream of municipal reservoirs must also be regulated under the Basin Plan amendment because the municipal reservoirs “have no flood control capacity” and “once they are full act as an impervious surface and actually increase stormwater discharge downstream.” We respond by drawing attention to Attachment 4 of the submittal by Living Rivers Council (Napa County Unincorporated Area Water Supply, West Yost & Associates, 2005). In this report, West Yost & Associates provides data (in Table 2) regarding average annual inflow and storage capacity for each of the municipal reservoirs. We note that the two largest reservoirs, Lake Hennessey and Rector Reservoir, which drain 80 percent of the total land area located upstream of municipal reservoirs, have capacity to store 157 percent and 119 percent respectively of average annual inflow. Typically, at the beginning of the wet season, these and other municipal reservoirs are approximately two-thirds full (Napa County, unpublished hydrological data). Therefore, available storage capacity (runoff attenuation) is</p>

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			<p>typically equal to approximately 40-to-50 percent of the total average annual runoff to these reservoirs. To claim that large municipal reservoirs do not significantly attenuate downstream runoff peak in Conn Creek and Rector Creek downstream of the reservoirs in most storm events appears to be incorrect. The volume of available reservoir storage in all years is very large in comparison to possible amplification of runoff resulting from land uses, and the dampening effect of reservoir hydraulics further attenuates flood routing (e.g., the reservoir has much deeper water, and a more gentle gradient than the natural channel underneath it). Two of the other three municipal reservoirs, Bell Canyon and Milliken, also are long and deep enough to effectively attenuate runoff based on hydraulics. The only municipal reservoir that arguably may be too small to attenuate increases in runoff is Kimball Canyon (which has a 335 acre-ft storage capacity), however we are not aware of any evidence of active incision on Kimball Canyon Creek and/or in the upper Napa River upstream of the Town of Calistoga.”</p> <p>State Water Board staff reviewed the SF Bay Water Board’s response to this comment and agrees with the response.</p> <p>Please see Response to Comment 0.1.</p>
49	LRC (Higgins)	<p>Water Board staff is incorrect in asserting that lack of steelhead passage above reservoirs means that there is no potential for steelhead production.</p> <p>Titus et al. (2006) found that non-anadromous resident rainbow trout high in southern and south central coastal California watersheds may exhibit an anadromous life history, if washed downstream to the ocean. Similarly, sea run steelhead may gain access to steep headwater streams in years of high flow and</p>	<p>Habitat areas upstream of municipal reservoirs in the Napa River watershed were not included in the critical habitat designation for steelhead in the Central California Coastal ESU. Considering the dam heights and spillway characteristics (e.g., very steep, flat bottomed concrete chutes more than 100 meters long), very few if any juvenile trout inhabiting streams upstream of these reservoirs would survive involuntary</p>

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		<p>replenish “trout” populations. Populations of rainbow trout above dams in the Carmel River watershed are thought to have provided a mechanism for rebuilding anadromous steelhead runs after a prolonged drought had prevented steelhead spawning from 1987 to 1991 (Good et al. 2005, Boughton et al. 2006, Moyle et al. 2008). Landlocked populations of rainbow trout above Napa River dams likely have steelhead ancestry and should be fully protected.</p>	<p>transport through the spillways, should this occur. Also, because the commenter does not include: Good (2005); Boughton (2006); and/or Moyle et al. (2008) in the list of references cited, State Board Staff are unable to respond to the specific comment.</p> <p>The SF Bay Water Board remains interested in learning more about the genetics of the rainbow/steelhead trout inhabiting reaches upstream of the municipal reservoirs in the Napa River watershed. SF Bay Water Board staff are not aware of any tissue sampling that has been performed to evaluate their genetic integrity.</p>
50	LRC (Higgins)	<p>Cumulative Effects Not Dealt With in Substance:</p> <p>As pointed out in previous comments, numerous ... studies of the impacts of watershed disturbance on aquatic ecosystems in northern California indicate that damage cannot be prevented with on-site mitigation, if disturbance is too widespread (Ligon et al. 1999, Dunne et al. 2001, Collison et al. 2003). Water Board staff continues to argue that compliance with Napa County ordinances and Fish Friendly Farming measures during vineyard construction and operation will prevent increased sediment yield and elevated peak flows despite the fact that these activities cover tens of thousands of acres”</p>	<p>The SF Bay Water Board has already addressed this comment in its Response to Comment Part 1, 2009 comment no. 4.PH4 and 4.PH5</p> <p>Also, please see responses 34-35 above.</p>
51	LRC (Higgins)	<p>Monitoring Tools and Their Application:</p> <p>“... I agree that scour and fill of the stream bed is a reliable indicator of spawning success and that scour and fill targets of 15 cm are appropriate. However, recent literature (Horner et al. 2005, Kondolf et al. 2008) indicate that use of permeability as an indicator of spawning gravel quality and fish egg and alevin survival and growth remain problematic. Kondolf et al. (2008) point out that each permeability sample only represents the area within 20 cm radius and describe potential problems:</p> <p style="text-align: center;">“A small number of permeability tests may not accurately characterize a habitat zone such as a riffle, and the number of these</p>	<p>The SF Bay Water Board has already addressed this comment in its response to comments Part I, 2009 Comment No. 4.PH6 where a similar criticism was made.</p> <p>State Water Board staff reviewed the SF Bay Water Board’s response to this comment and agrees with the response.</p> <p>Please see Response to Comment 0.1.</p> <p>In regard to further specific comments about permeability:</p>

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	<p>tests required to accurately characterize the permeability of a habitat zone could be prohibitive. Field workers who have used these methods commonly report one or two orders of magnitude variability in permeability estimates within a habitat zone or over small intervals of the stream (Bush 2006). This variability may be a combination of leakage along the annulus of the standpipe, small zone of influence for individual tests, and a highly heterogeneous natural environment.”</p> <p>American River gravel quality studies by California State University at Sacramento (CSUS) (Horner et al. 2005) used three methods of measuring permeability, but results did not agree. They found values of permeability using the Terhune (1958) standpipe and methods of Barnard and McBain (1994) ranging from zero cm/hr to more than 100,000 cm/hr. Only three sites rated less than the 7000 cm/hr. target set in the Napa River TMDL.</p> <p>The 7000 cm/hr is not based on literature that correlates it with successful salmon or steelhead egg and alevin survival. Kondolf et al. (2008) recommend gauging the fitness of fry emerging from the gravel where measurements have been taken to establish the relationship of permeability and other gravel quality metrics and the growth and survival of salmonids. If metrics with better known relationships were used (McNeil and Ahnell 1964), then such difficult and expensive correlation studies would not be necessary.</p> <p>While the Water Board staff has committed to measuring turbidity and residual pool depth due to requests from LRC, there is no defined plan for establishment of continuous recording turbidity stations or any indication of where residual pool depths will be measured. At least ten continuous recording turbidity meters need to be installed in Napa River tributaries as soon as possible to discern whether restoration measures are working. For example, Carneros Creek has well identified problems with excess sediment over supply (Pearce and Grossinger 2005) and the NCRCD and Water Board staff are treating roads to reduce sediment yield. Consequently, a continuous turbidity meter on Carneros Creek needs to be installed as soon as possible to facilitate adaptive management.”</p>	<p>SF Bay Water Board found a very strong correlation between reach median values for permeability and estimated sediment supply rate (Staff Report, Page 42, Figure 14, SF Bay Water Board, 2009). Reach median values are developed from sampling all potential spawning sites within a given reach (often 8-to-to-20 sites, at each of which where we performed two-or-more individual measurements). The strength of the correlation and sampling intensity relied upon, can adequately address concerns about the confidence that SF Bay Water Board accurately characterized the suitability of potential spawning sites as a function of fine sedimentation, using permeability as a metric. The proposed value for the numeric target for permeability is based on relationships between permeability and survival to emergence for coho salmon and Chinook salmon measured in the field at streams in Washington and Oregon (Taggart, 1976, and McCuddin, 1977).</p> <p>With regard to turbidity, please note that USEPA recently awarded a grant to the Napa County RCD to develop a specific sampling and analysis plan for streambed scour, permeability, and turbidity. This work should be completed within approximately one year, providing a basis for confirming the details of the monitoring program for all three attributes.</p>
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