California Regional Water Quality Control Board
Santa Ana Region

July 15, 2011

ITEM: 8

SUBJECT: Public Hearing on Revisions to the Basin Plan Amendment Establishing Total Maximum Daily Loads (TMDLs) for Organochlorine Compounds for San Diego Creek, Upper Newport Bay and Lower Newport Bay - Staff Report; Resolution No. R8-2011-0037

SUMMARY

On September 7, 2007, the Regional Board adopted Resolution No. R8-2007-0024, approving a Basin Plan Amendment (BPA, or amendment) to incorporate TMDLs for organochlorine compounds (OCs) for San Diego Creek, Upper Newport Bay and Lower Newport Bay. The adopted amendment, shown in Attachment 2 to Resolution No. R8-2007-0024, is attached to this staff report as Exhibit 1.

Revisions to the adopted amendment are now being proposed to: (1) extend the final compliance date of the TMDLs to a date certain seven years from the date of approval of the TMDLs by the Office of Administrative Law; and, (2) make minor, non-substantive modifications to the amendment. The proposed modifications are shown in strikeout (for deletions) and underline (for additions) format in the draft revised BPA that is shown in Attachment 1 to Tentative Resolution No. R8-2011-0037.

Extending the TMDL compliance date is appropriate in light of the significant, unavoidable delay in consideration and approval of the Regional Board TMDLs by all requisite agencies. The schedules for completion of the individual implementation tasks expected to lead to TMDL compliance are contingent on the date of approval of the amendment by the Office of Administrative Law. Given the delay in consideration of approval, the completion of the individual implementation tasks will likely extend beyond the current final TMDL compliance date. The minor modifications recommended would correct grammatical and other inadvertent, non-substantive errors and clarify terms employed in the amendment.

If the Regional Board approves the recommended changes, the revised amendment will be forwarded to the State Water Resources Control Board (State Board), the State Office of Administrative Law (OAL) and the U.S. Environmental Protection Agency (USEPA) for approval.

DISCUSSION

Background

On June 14, 2002, USEPA promulgated toxics TMDLs for San Diego Creek, Upper Newport Bay and Lower Newport Bay that included TMDLs for organochlorine compounds (OCs). The organochlorine compounds (OCs) addressed by the USEPA TMDLs included polychlorinated biphenyl (PCBs) and the legacy pesticides 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane [DDT], chlordane, dieldrin and toxaphene.

Regional Board staff subsequently reassessed USEPA's impairment decisions for San Diego Creek, Upper Newport Bay and Lower Newport Bay (or, collectively, the 'Newport Bay watershed') and, in turn, USEPA's OCs TMDLs. Board staff recommended revised TMDLs for the waterbody-pollutant combinations shown in Table 1, below. The waterbody-pollutant combinations differ from those identified by USEPA.

The technical staff report prepared by Regional Board staff, "Total Maximum Daily Loads for Organochlorine Compounds, San Diego Creek: Total DDT and Toxaphene, Upper and Lower Newport Bay: Total DDT, Chlordane, Total PCBs, Orange County, California", November 17, 2006 (Ref. 1) contains a comprehensive discussion of the basis for determining those OCs for which TMDLs needed to be established, and the technical basis for those TMDLs. Further, the technical staff report, and the supplemental staff reports (January 7, 2007, April 20, 2007 and September 7, 2007) prepared by Board staff, delineate and explain the implementation plan recommended to achieve the revised TMDLs. USEPA's TMDLs did not include an implementation plan since this is the responsibility of the State.

The Regional Board approved the recommended TMDLs, including the implementation plan, on September 7, 2007 (Resolution No. R8-2007-0024). The approved amendment is shown in Exhibit 1 of this staff report.

Table 1. Waterbody-Pollutant combinations: Regional Board OCs TMDLs

Waterbody	***Pollutant***
San Diego Creek and tributaries	Toxaphene, DDT Chlordane, PCBs (informational TMDLs only) *
Upper Newport Bay	DDT, PCBs, Chlordane
Lower Newport Bay	DDT, PCBs, Chlordane

* No impairment due to chlordane or PCBs was found for San Diego Creek and its tributaries. Informational TMDLs were developed in light of findings of impairment due to these substances in Upper and Lower Newport Bay, the fact that San Diego Creek is the major tributary to the Bay, and concerns regarding the paucity of relevant data for the Creek. Informational TMDLs are not enforceable but may guide future TMDL development, if necessary.

The Regional Board-adopted TMDL implementation plan (see Exhibit 1, Section 4.b.3., pp.8 of 33 *et seq.*) employs an adaptive management, phased approach, with final TMDL compliance to be achieved as soon as possible but no later than December 31, 2015. The plan of implementation focuses on actions to accelerate the decline in organochlorine compound concentrations in the watershed, and to augment their natural attenuation. As such, the implementation plan is focused to a large extent on the monitoring and, where necessary, enhanced implementation of Best Management Practices (BMPs) to reduce the erosion and transport to surface waters of fine sediment to which the organochlorine compounds tend to adhere. Many of these BMPs are already in place as the result of existing permits issued by the Regional Board or State Board for storm water and construction activities, and/or in response to sediment and nutrient TMDLs already established and being implemented in the Newport Bay watershed. The goal is to assure that source control activities are implemented to reduce any active sources of the organochlorine compounds, and in other areas where such actions will be most effective in meeting the TMDL goals. Monitoring and special study requirements are included in the implementation plan to provide for TMDL compliance assessment and refinement.

The phased implementation approach and TMDL compliance schedule also recognize that monitoring and special studies will be necessary to address data limitations and uncertainties regarding the impairment assessment and calculation of the TMDLs and allocations. During the public participation process associated with Regional Board consideration of the revised TMDLs, a number of watershed stakeholders expressed concerns regarding the technical and scientific basis of the TMDLs and, in particular, the recommended numeric targets that formed the basis for calculating the TMDLs. The Implementation Plan was revised to address these concerns. Specifically, the Implementation Plan was revised to include an option for regulated stakeholders in the Newport Bay watershed to convene a Working Group to develop and implement a comprehensive Work Plan to address, as an early action item, the technical uncertainties in the TMDLs and to make recommendations for revisions, as appropriate. It was expected that the Working Group would work with an Independent Advisory Panel to conduct this review and formulate TMDL-related recommendations. The comprehensive Work Plan is also expected to identify and prioritize tasks necessary to implement the TMDLs, integrate TMDL implementation tasks with those already being conducted in response to other programs (e.g., permits, other TMDLs), and, investigate other pollutants of concern in the watershed.

Completion of the Work Plan is expected to result, in part, in recommendations for revisions to the Regional Board's TMDLs based on review by the Independent Advisory Panel and the results of ongoing or requisite monitoring and investigations. Further, completion of the Work Plan will result in the development of a comprehensive plan for BMPs and other actions needed to assure compliance with the TMDLs, wasteload allocations and load allocations in accordance with the schedule specified in the TMDLs, i.e., as soon as possible after completion of execution of the Work Plan but no later than December 31, 2015. The Implementation Plan also specifies that dischargers who elect not to participate in the Work Plan approach are required to execute

applicable implementation tasks independently. In either case, the established final TMDL compliance date is as soon as possible but no later than December 31, 2015.

The table summarizing implementation tasks and schedules, Table NB-OCs-13, is shown in Exhibit 1, pp. 14 and 15. As noted, the completion date for each of the tasks is contingent on the date of Office of Administrative Law (OAL) approval (at the time of Regional Board consideration of the TMDLs, Board staff considered that these TMDLs would be effective for regulatory purposes upon OAL approval). The final TMDL compliance date was established based on the assumption that OAL approval would occur in 2008, and that no more than seven years after that approval would be required to achieve the TMDLs.

Recommended Change in Final TMDL Compliance Date

Before OAL approval can be considered, approval of the BPA by the State Board must be obtained. Accordingly, in July 2009, Regional Board staff submitted the Regional Board approved OCs TMDLs, including the implementation plan, and the administrative record to the State Board for their consideration. Clearly, there was a significant delay (from September 2007 to July 2009) in the submittal of the Regional Board approved amendment to the State Board. This delay was occasioned by the loss of the staff person responsible for development of the OCs TMDLs, other staff resource limitations and the demands of other high priority work.

In light of the delay in the approval process, Board staff determined that it would be appropriate to consider revising the final TMDL compliance date. Accordingly, the Basin Plan amendment was withdrawn from State Board consideration in July 2010.

The final compliance date (as soon as possible but no later than December 31, 2015) specified in the TMDL implementation plan did not anticipate the period of time that has lapsed since Regional Board adoption of the BPA on September 7, 2007, and its presentation for State Board and other agency approval. The TMDLs/implementation plan adopted by the Regional Board in 2007 specify schedules for completion of the individual implementation tasks that extend for specific periods *after* the date of OAL approval, and the final compliance date was based on the date anticipated for OAL approval. The Regional Board adopted this approach recognizing that early implementation efforts might prove inappropriate and wasteful if, for some reason, the TMDLs/implementation plan were to be revised as the amendment proceeded through the approval process. An extended compliance date, as now being proposed, would be consistent with the Regional Board's original intent to provide a specific time period to achieve the TMDLs once the TMDLs are approved by OAL.

The approval process for a revised BPA, if adopted by the Regional Board, is expected to require on the order of one to two years. It is reasonable to provide an additional period of time for implementation of measures to achieve compliance with the TMDLs once the approval process is complete. Given uncertainties in the schedule for other agency approvals, Board staff recommends that the date to achieve final compliance with the TMDLs be revised from "as soon as possible but no later than December 31,

2015" to "as soon as possible but no later than seven years from the date of OAL approval". The date certain for final compliance would be established based on the date of OAL approval, and inserted in the Basin Plan amendment after OAL approval. Proposed changes to the final compliance date are shown in Attachment 1 to Tentative Resolution No R8-2011-0037.

Other Recommendations

In addition to the recommendation to revise the final TMDL compliance date, Board staff recommends the minor modifications shown in underline/strikeout format in the draft revised amendment shown in Attachment 1 to Resolution No. R8-2011-0037. These modifications will correct grammatical and other non-substantive errors in the text, and provide clarification regarding acronyms employed.

In comments provided to the State Board, USEPA has indicated support of the Regional Board's OCs TMDLs BPA, based on the technical approach and adaptive implementation plan, and urged the approval of the TMDLs. USEPA also suggested the inclusion of language, in the adopting resolution or elsewhere, to make clear that the approved TMDLs would replace those promulgated by USEPA. USEPA's recommendation is reflected in Resolution No. R8-2011-0037, Finding 18.

Alternatives

The Regional Board could elect not to revise the final compliance date (as soon as possible but no later than December 31, 2015) that is specified in the TMDLs adopted in 2007. This would not be consistent with the Regional Board's intent to allow a compliance period with a specific timeframe once the TMDLs are approved by OAL. Nor would it provide adequate time to implement and complete the measures to achieve compliance.

The Regional Board could also consider revising the final compliance date to an alternative time certain, based on more or less than the seven years from OAL approval recommended by Board staff. The seven year time period would be consistent with the Regional Board's original schedule for final compliance beyond OAL approval. A shorter time frame would likely not provide sufficient time to complete and implement the Work Plan and other tasks specified in the Implementation Plan to achieve TMDL compliance. A longer time frame may delay compliance with the TMDLs and thus prolong impairment of surface waters within the Newport Bay watershed due to the organochlorine compounds.

Additional CEQA Consideration

The Regional Board is required to comply with the California Environmental Quality Act (CEQA)[1] when considering an amendment to the Basin Plan[2]. The Regional Board was

[1] Public Resources Code Sec. 21000 *et seq*
[2] Public Resources Code Sec. 21080

the Lead Agency responsible to evaluate the potential environmental impacts of the OCs TMDL Basin Plan amendment (Attachment 2 to Resolution No. R8-2007-0024)(Exhibit 1), and, in particular, the potential effects of reasonably foreseeable methods of compliance with the adopted organochlorine compounds TMDLs. The State Resources Agency has certified the Water Quality Control (Basin) Planning Program of the State and Regional Boards as exempt from the requirement to prepare an Environmental Impact Report (EIR), Negative Declaration (ND) or Initial Study[3]. In lieu of preparing these documents, the Regional Board, in compliance with State Board regulations on exempt regulatory programs, prepared two written reports: the Substitute Environmental Document (SED) dated July 25, 2007 and the November 17, 2006 TMDL technical staff report ("Total Maximum Daily Loads for Organochlorine Compounds - San Diego Creek: Total DDT and Toxaphene; Upper and Lower Newport Bay: Total DDT, Chlordane, Total PCBs, Orange County, California"). These reports describe the Basin Plan amendment and its technical basis and an implementation plan, and identified reasonable alternatives and mitigation measures. Regional Board staff also prepared supplemental staff reports (January 7, 2007, April 20, 2007 and September 7, 2007) to describe changes to the amendment initially proposed.

To fulfill its obligations pursuant to CEQA, the Regional Board completed the requisite environmental and economic analysis, including an environmental checklist. These analyses took into account possible alternative final TMDL compliance dates and whether there would be any different environmental effect associated with a longer or shorter compliance period. The conclusion was that a longer compliance date might result in reduced environmental impact if the result of the extended compliance period was a reduction in the number of BMPs necessary to achieve compliance, or a change in the type of BMPs needed to those with less environmental impact. In contrast, it was concluded that a shorter TMDL compliance time frame could result in greater environmental impact if the shorter compliance period limited the opportunity to evaluate and refine BMPs to optimize their efficacy while minimizing their environmental effect (SED, Section 7)(Ref. 2).

Taking these analyses into account, in approving Resolution No. R8-2007-0024, the Regional Board adopted "Findings of Fact and Statement of Overriding Considerations" (Attachment 1 to Resolution No.R8-2007-0024) (Exhibit 2). Regional Board staff has reviewed the SED, the technical staff report, and Findings of Fact/Statement of Overriding Considerations to determine whether and in what manner, if any, the extension of the final compliance date for the OCs TMDLs now proposed would modify the Regional Board's previously approved CEQA determinations, necessitating reconsideration of the SED, Environmental Checklist and/or the Findings of Fact/Statement of Overriding Considerations. Regional Board staff concludes that changing the TMDL compliance date would have no effect on the environmental analysis. Therefore, as part of the approval of Resolution No. R8-2011-0037, Regional Board staff recommends that the Regional Board reaffirm the Findings of Fact and Statement of Overriding Considerations approved on September 7, 2007.

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[3] California Code of Regulations, Title 14, Sec. 15251(g)

Economics

Section 9.0 of the TMDL technical staff report, "Total Maximum Daily Loads for Organochlorine Compounds - San Diego Creek: Total DDT and Toxaphene; Upper and Lower Newport Bay: Total DDT, Chlordane, Total PCBs, Orange County, California" prepared by Regional Board staff and dated November 17, 2006, discussed the costs of reasonably foreseeable methods of compliance with the OCs TMDLs. The 2006 cost information was estimated using information obtained from handbooks compiled by the U.S. Natural Resources Conservation Service (NRCS) and California Stormwater Quality Association (CASQA). It is likely that the costs for some or all of the BMPs have increased over time. Delays in consideration of approval of the TMDLs and their implementation may have resulted in cost savings to the responsible parties during the period of delay.

While economics must be considered, there is no statutory requirement for a formal cost-benefit analysis.

Peer Review

Scientific peer review of the proposed OCs TMDLs was conducted prior to their approval by the Regional Board in September 7, 2007. The proposed changes to the Regional Board-approved OCs TMDLs do not raise any scientific issues that would necessitate additional scientific peer review.

STAFF RECOMMENDATION

Regional Board staff recommends that the Regional Board approve Resolution No. R8-2011-0037, amending the organochlorine compounds TMDLs Basin Plan amendment approved by the Regional Board on September 7, 2007 (Resolution No. R8-2007-0024) as set forth in Attachment 1 to Resolution No. R8-2011-0037. The revised Basin Plan amendment that would be presented to the State Board for consideration of approval is shown in Attachment 2 to Resolution No. R8-2011-0037.

ATTACHMENTS TO STAFF REPORT

ATTACHMENT	TITLE
Exhibit 1	Attachment 2 to Resolution No. R8-2007-0024: San Diego Creek and Upper and Lower Newport Bay Organochlorine Compounds TMDLs Basin Plan amendment
Exhibit 2	Findings of Fact and Statement of Overriding Considerations (Attachment 1 to Resolution No. R8-2007-0024)
Tentative Resolution No. R8-2011-0037	
	Attachment 1: Draft Revised Organochlorine Compounds TMDLs Basin Plan amendment "Underline/Strikeout Version"

	Attachment 2: Revised San Diego Creek and Upper and Lower Newport Bay Organochlorine Compounds TMDLs Basin Plan amendment

REFERENCES

1. Total Maximum Daily Loads for Organochlorine Compounds; San Diego Creek: Total DDT and Toxaphene; Upper and Lower Newport Bay: Total DDT, Chlordane, Total PCBs, Orange County, California. Santa Ana Regional Water Quality Control Board. Prepared by Kathy Rose. November 17, 2006.

2. Environmental Checklist and Analysis; Substitute Environmental Document for the Organochlorine Compounds Total Maximum Daily Loads, San Diego Creek, Upper Newport Bay and Lower Newport Bay, Orange County, CA. California Regional Water Quality Control Board, Santa Ana Region. July 25, 2007.

California Regional Water Quality Control Board
Santa Ana Region

RESOLUTION NO. R8-2011- 0037

Resolution Revising the Amendment to the Water Quality Control Plan for the Santa Ana River Basin to Incorporate Organochlorine Compounds Total Maximum Daily Loads (TMDLs) for San Diego Creek, Upper and Lower Newport Bay, Orange County, California, Adopted by Resolution No. R8-2007-0024

Tentative

WHEREAS, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Regional Board), finds that:

1. An updated Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was adopted by the Santa Ana Regional Water Quality Control Board (Regional Board) on March 11, 1994, approved by the State Water Resources Control Board (SWRCB) on July 21, 1994, and approved by the Office of Administrative Law (OAL) on January 24, 1995.

2. On September 7, 2007, the Regional Board adopted Resolution No. R8-2007-0024, incorporating Total Maximum Daily Loads (TMDLs) for organochlorine compounds for San Diego Creek, Upper Newport Bay and Lower Newport Bay into the Basin Plan. The Basin Plan amendment is shown in Attachment 2 to Resolution No. R8-2007-0024.

3. The organochlorine compounds TMDLs Basin Plan amendment specifies that compliance with the TMDLs is to be achieved as soon as possible but no later than December 31, 2015. This date was established based on the assumptions that: (a) requisite approval of the TMDLs by the Office of Administrative Law (OAL) would occur in 2008 and that the TMDLs would become effective for regulatory purposes upon that approval; and, (b) no more than seven years after OAL approval would be required to achieve the TMDLs. This approach was appropriate to assure that implementation efforts were not compromised by any changes to the TMDLs, including the implementation plan, that might be made as the Basin Plan amendment proceeded through the approval process and before the TMDLs became effective for regulatory purposes.

4. The organochlorine compounds TMDLs Basin Plan amendment includes an implementation plan that identifies individual tasks that must be performed in order to achieve compliance with the TMDLs. The schedules for completion of these tasks are also contingent on the date of OAL approval of the TMDLs.

5. Approval of the organochlorine compounds TMDLs Basin Plan amendment by the State Water Resources Control Board (State Board, or SWRCB) is necessary prior to approval of the amendment by OAL. Unforeseen and significant delays occurred in the submittal of the Regional Board-approved amendment to the State Board, resulting in delay of State Board and thus OAL consideration of approval of the Basin Plan amendment. Given these delays in consideration of approval by OAL, it is appropriate to revise the final compliance date for the organochlorine compounds TMDLs.

6. It is appropriate to extend the final compliance date for the organochlorine compounds TMDLs to a date certain seven years from the date of approval of the TMDLs by OAL. This approach is consistent with the original intent to provide sufficient time after approval of the TMDLs by OAL to implement actions necessary to achieve the TMDLs. It is also appropriate as a matter of clarity and accuracy to make minor, non-substantive modifications to the organochlorine compounds TMDLs Basin Plan amendment in order to correct grammatical and other inadvertent errors and to clarify terms employed in the Basin Plan amendment.

7. The Regional Board prepared and distributed a written report (staff report) regarding the adoption of revisions to the organochlorine compounds TMDLs Basin Plan amendment in accordance with applicable State and federal environmental regulations (California Code of Regulations, Section 3775, Title 23, and 40 CFR Parts 25 and 131).

8. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) to prepare an Environmental Impact Report (EIR) or Negative Declaration (ND). In lieu of an EIR or ND, the Regional Board must comply with applicable regulations on exempt regulatory programs that require the preparation of a substitute environmental document (SED) to take the place of an EIR or ND. Consistent with this requirement, as part of the consideration of Resolution No. R8-2007-0024 to approve the Basin Plan amendment incorporating organochlorine compounds TMDLs, the Regional Board prepared an SED dated July 25, 2007. In compliance with CEQA, the Regional Board distributed the SED for public review, together with relevant Regional Board staff reports. This SED complied with applicable CEQA requirements to describe the proposed project, assess the potential adverse environmental effects of implementation of reasonably foreseeable methods of compliance, identify mitigation measures and evaluate alternatives.

9. The July 25, 2007 SED is considered a First Tier environmental document per Public Resources Code section 21159 and California Code of Regulations, Title 14, section 15187. When and if specific projects are proposed to achieve compliance with the requirements of the organochlorine compounds TMDLs, as

revised, these projects shall be reviewed, as required in conformance with applicable CEQA regulations, on a project-specific basis.

10. As set forth in Resolution No. R8-2007-0024, Findings 22 *et seq.*, the Regional Board found that implementation of reasonably foreseeable methods of compliance with the organochlorine compounds TMDLs has the potential to result in certain significant adverse environmental effects. The Regional Board found that while mitigation measures can be employed to substantially lessen these potentially significant environmental effects, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). The Regional Board declared (Finding 33) that "despite the occurrence of significant unavoidable environmental effects associated with the TMDLs, there exist certain overriding economic, social and other considerations for approving the TMDLs that the Regional Board believes justify the occurrence of those impacts and render them acceptable." In accordance with Public Resources Code section 21081(b) and CEQA Guidelines section 15093, the Regional Board adopted, as part of the adoption of Resolution No. R8-2007-0024, "CEQA Findings of Fact and Statement of Overriding Considerations for the Organochlorine Compounds Total Maximum Daily Loads for San Diego Creek, Upper Newport Bay and Lower Newport Bay – Substitute Environmental Document, September 7, 2007" (Attachment 1 to Resolution No. R8-2007-0024).

11. Pursuant to the requirements of CEQA, the Regional Board has considered whether the proposed modifications of the organochlorine compounds TMDLs Basin Plan amendment would necessitate any changes to the July 25, 2007 SED and/or September 7, 2007 CEQA Findings of Fact and Statement of Overriding Considerations. The Regional Board concludes that no modifications to these documents are required.

12. The Regional Board considered whether there are any economic implications associated with the proposed modifications of the organochlorine compounds TMDLs. Costs for some or all of the Best Management Practices that may be necessary to achieve the TMDLs may have increased since consideration of the TMDLs by the Regional Board in 2007. Delays in consideration of approval of the TMDLs and their implementation may have resulted in cost savings to the responsible parties during the period of delay.

13. Water Code Section 13421 requires a Regional Board, in establishing water quality objectives, to consider the costs of compliance. (*City of Arcadia v. State Water Resources Control Board* (2006) 135 Cal.App.4th 1392, 1415.). The Regional Board is here considering only revisions to the compliance date for the organochlorine compounds TMDLs and other, minor modifications to the organochlorine compounds TMDLs Basin Plan amendment, not changes to water quality objectives. Therefore, Water Code section 13241 does not apply. The Regional Board has nevertheless considered the costs of compliance with the TMDLs, and revisions to extend the compliance end date. That analysis,

presented in Section 9 of the November 17, 2006 Staff Report for the TMDLs and in the SED, and supplemented in the July 15, 2011 staff report supporting revisions to the organochlorine compounds TMDLs Basin Plan amendment, fully satisfied any obligation to address Water Code section 13241.

14. The revised Basin Plan amendment will assure the reasonable protection of the beneficial uses of surface waters within the Region and is consistent with the State antidegradation policy (SWRCB Resolution No. 68-16).

15. The revisions to the Basin Plan amendment meet the "Necessity" standard of the Administrative Procedure Act, Government Code, Section 11352(b).

16. Scientific peer review of the organochlorine compounds TMDLs was conducted prior to their approval by the Regional Board in September 7, 2007. The proposed changes to the Regional Board-approved organochlorine compounds TMDLs do not raise any scientific issues that would necessitate additional scientific peer review.

17. The proposed revised amendment will result in revisions to the Basin Plan Chapter 5 "Implementation".

18. The U.S. Environmental Protection Agency (USEPA) indicated support of the Regional Board's organochlorine compounds TMDLs Basin Plan amendment, based on the technical approach and adaptive implementation plan. As such, these Regional Board TMDLs, once approved by the State Board and the Office of Administrative Law, will replace those that were promulgated by USEPA on June 14, 2002.

19. The Notice of Filing, Notice of Public Hearing, the TMDL Report, Substitute Environmental Document, and the draft revised amendment were prepared and distributed to interested individuals and public agencies for review and comment, in accordance with state and federal regulations (23 CCR 3775, 40 CFR 25 and 40 CFR 131).

20. The Regional Board discussed the revisions to the Basin Plan amendment at a public hearing conducted on July 15, 2011 after a public hearing notice was distributed on May 24, 2011 to all interested persons in accordance with Section 13244 of the California Water Code.

21. The revised Basin Plan amendment must be submitted for review and approval by the State Water Resources Control Board (SWRCB), Office of Administrative Law (OAL) and U.S. Environmental Protection Agency (USEPA). Once approved by the SWRCB, the amendment is submitted to OAL and USEPA. A Notice of Decision will be filed.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Regional Board reaffirms the CEQA Findings of Fact and Statement of Overriding Considerations adopted as part of the approval of Resolution No. R8-2007-0024 (Attachment 1 to Resolution No. R8-2007-0024).

2. The Regional Board adopts the revised amendment to the Water Quality Control Plan for the Santa Ana River Basin (Region 8), as set forth in Attachment 2.

3. The Executive Officer is directed to forward copies of the revised Basin Plan amendment to the SWRCB in accordance with the requirements of Section §13245 of the California Water Code.

4. The Regional Board requests that the SWRCB approve the revised Basin Plan amendment, in accordance with Sections §13245 and §13246 of the California Water Code, and forward it to the OAL and USEPA for approval.

5. If, during its approval process, Regional Board staff, SWRCB or OAL determines that minor, nonsubstantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.

6. The Executive Officer is directed, at the time of filing and posting the Notice of Decision, to take steps to promptly ensure payment of $850 to the Department of Fish and Game for its review of the SED or to file a Certificate of Fee Exemption, whichever is appropriate.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Santa Ana Region, on July 15, 2011.

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Kurt V. Berchtold
Executive Officer

ATTACHMENT 1 TO RESOLUTION NO. R8-2011-0037
Draft Revised Organochlorine Compounds TMDLs for San Diego Creek, Upper and Lower Newport Bay (Attachment 2 to Resolution No. R8-2007-0024)

Note: Additions are underlined; deleted text is shown in ~~strikeout~~ type

Chapter 5 - Implementation Plan, Discussion of Newport Bay Watershed (page 5-39 *et seq*), add the following to 4. Toxics Substances Contamination

4.b Organochlorine Compounds TMDLs

Organochlorine compounds, including DDT, PCBs, toxaphene and chlordane, possess unique physical and chemical properties that influence their persistence, fate and transport in the environment. While these characteristics vary among the organochlorine compounds, they all exhibit an ability to resist degradation, partition into sediment, and to accumulate in the tissue of organisms, including invertebrates, fish, birds and mammals. The bioaccumulation of these compounds can adversely affect the health and reproductive success of aquatic organisms and their predators, and can pose a health threat to human consumers.

A TMDL technical report prepared by Regional Board staff [Ref. # 1] describes organochlorine-related problems in Newport Bay and its watershed and delineates the technical basis for the TMDLs that follow.

The waterbody-pollutant combinations for which organochlorine compounds TMDLs were established by the Regional Board are listed in Table NB-OCs-1. These TMDLs differ from those established by USEPA in 2002 in several respects:

First, based on an updated impairment assessment that utilized new data and applied the State Water Board's "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List" (2004) [Ref. # 2], the Regional Board established TMDLs for a list of organochlorine compound-waterbody combinations different from that of USEPA. As shown in Table NB-OCs-2, USEPA also established TMDLs for dieldrin, chlordane, and PCBs in San Diego Creek and for dieldrin in Lower Newport Bay. In contrast, the Regional Board found no impairment as the result of dieldrin in any of these waters, nor was impairment due to chlordane or PCBs found in San Diego Creek and its tributaries.

As described in the TMDL technical report, Regional Board staff also found no impairment due to DDT in San Diego Creek or its tributaries. However, in adopting the 2006 Section 303(d) list (October 25, 2006, Resolution No. 2006-0079), the State Water Board found impairment due to DDT in Peter's Canyon Channel. In response, the Regional Board established a TMDL for DDT in San Diego Creek and its tributaries, including Peters Canyon Channel.

Second, corrections and modifications were made to loading capacities and existing loads identified in USEPA's TMDLs. Finally, an implementation plan is specified (see Section 4.b.3).

While the Regional Board did not establish TMDLs for chlordane and PCBs for San Diego Creek and tributaries, the Board did develop informational TMDLs for these substances in these waters, pursuant to Clean Water Act Section 303(d)(3). These informational TMDLs are shown in Table NB-OCs-3. This action was taken in light of several factors. First, the largest source of organochlorine compounds to Newport Bay is San Diego Creek. Second, the data suggest that the existing loading of chlordane to the Creek is greater than the loading capacity. This suggests that the lack of finding of impairment due to chlordane may be simply a reflection of a lack of data with which to assess impairment. Finally, these informational TMDLs may forward action to address organochlorine compound problems in the watershed. These informational TMDLs have no regulatory effect but may be used as the basis for further investigation of the relative contributions of the various sources of organochlorine compound inputs to San Diego Creek and thence the Bay. In the long-term, this would be expected to help assure proper apportionment of responsibility for implementation of the TMDLs identified in Table NB-OCs-1.

Table NB-OCs-1. Waterbody-pollutant combinations for which Organochlorine Compound TMDLs are established

Waterbody	***Pollutant***
San Diego Creek and tributaries	DDT, Toxaphene
Upper Newport Bay	Chlordane, DDT, PCBs
Lower Newport Bay	Chlordane, DDT, PCBs

Table NB-OCs-2. Waterbody-pollutant combinations for which Organochlorine Compounds TMDLs were established by USEPA (2002) and Regional Board (2007)

Waterbody	*TMDLs*	
	USEPA	**Regional Board**
San Diego Creek and tributaries*	Chlordane, dieldrin, DDT, PCBs, Toxaphene	DDT, Toxaphene
Upper Newport Bay	Chlordane, DDT, PCBs	Chlordane, DDT, PCBs
Lower Newport Bay	Chlordane, dieldrin, DDT, PCBs	Chlordane, DDT, PCBs

*TMDLs are established for San Diego Creek and tributaries, even if impairment was only found in particular reaches (e.g., SWRCB found DDT impairment in Peter's Canyon Channel, a primary tributary to San Diego Creek Reach 1, but the TMDL includes all of San Diego Creek and tributaries).

Table NB-OCs-3. Informational TMDLs

Waterbody	*Informational TMDLs*
San Diego Creek and tributaries	Chlordane, PCBs

4.b.1 Numeric Targets used in Organochlorine Compounds TMDLs

Numeric targets identify specific endpoints in sediment, water column or tissue that equate to attainment of water quality standards, which is the purpose of TMDLs. Multiple targets may be appropriate where a single indicator is insufficient to protect all beneficial uses and/or attain all applicable water quality objectives. The range of beneficial uses identified in this Basin Plan (see Chapter 3) for the waters addressed by the organochlorine compounds TMDLs makes clear that the targets must address the protection of aquatic organisms, wildlife (including federally listed threatened and endangered species) and human consumers of recreationally and commercially caught fish.

Sediment, water column and fish tissue targets are identified for these TMDLs, as shown in Table NB-OCs-4. The sediment and water column targets are identical to those selected by USEPA in the development of their organochlorine compounds TMDLs (2002). Fish tissue targets are added for the protection of aquatic life and wildlife.

The targets employed in the development of informational TMDLs for chlordane and PCBs in San Diego Creek and its tributaries are shown in Table NB-OCs-5.

Table NB-OCs-4. Numeric Sediment, Fish Tissue, and Water Column TMDL Targets

	Total DDT	Chlordane	Total PCBs	Toxaphene
Sediment Targets[1]; units are µg/kg dry weight				
San Diego Creek and tributaries	6.98			0.1
Upper & Lower Newport Bay	3.89	2.26	21.5	
Fish Tissue Targets for Protection of Human Health[2]; units are µg/kg wet weight				
San Diego Creek and tributaries	100			30
Upper & Lower Newport Bay	100	30	20	
Fish Tissue Targets for Protection of Aquatic Life and Wildlife[3]; units are µg/kg wet weight				
San Diego Creek and tributaries	1000			100
Upper & Lower Newport Bay	50	50	500	
Water Column Targets for Protection of Aquatic Life, Wildlife & Human Health[4] (µg/L)				
San Diego Creek and tributaries				
Acute Criterion (CMC[a])	1.1			0.73
Chronic Criterion (CCC[b])	0.001			0.0002
Human Health Criterion	0.00059			0.00075
Upper & Lower Newport Bay				
Acute Criterion (CMC[a])	0.13	0.09		
Chronic Criterion (CCC[b])	0.001	0.004	0.03	
Human Health Criterion	0.00059	0.00059	0.00017	

[1]Freshwater and marine sediment targets, except toxaphene, are Threshold Effect Levels (TELs) from Buchman, M.F. 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pp. Toxaphene target is from N.Y. Dept. of Environmental Conservation.

[2]Freshwater and marine fish tissue targets for protection of human health are Office of Environmental Health Hazard Assessment (OEHHA) Screening Values (SVs).

[3]Freshwater and marine fish tissue targets for protection of aquatic life and wildlife are from Water Quality Criteria 1972. A report of the Committee on Water Quality Criteria, Environmental Studies Board, National Academy of Sciences, National Academy of Engineering. Washington, D.C., 1972.

[4]Freshwater and marine targets are from California Toxics Rule (2000).

[a] CMC: Criteria Maximum Concentration
[b] CCC: Continuous Criteria Concentration

Table NB-OCs-5. Numeric Sediment, Fish Tissue, and Water Column Targets used in Informational TMDLs

	Chlordane	Total PCBs
Sediment Targets[1]; units are µg/kg dry weight		
San Diego Creek and tributaries	4.5	34.1
Fish Tissue Targets for Protection of Human Health[2]; units are µg/kg wet weight		
San Diego Creek and tributaries	30	20
Fish Tissue Targets for Protection of Aquatic Life and Wildlife[3]; units are µg/kg wet weight		
San Diego Creek and tributaries	100	500
Water Column Targets for Protection of Aquatic Life, Wildlife & Human Health[4] (µg/L)		
San Diego Creek and tributaries		
Acute Criterion (CMC[a])	2.4	
Chronic Criterion (CCC[b])	0.0043	0.014
Human Health Criterion	0.00059	0.00017

[1]Freshwater sediment targets are Threshold Effect Levels (TELs) from Buchman, M.F. 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pp.
[2]Freshwater fish tissue targets for protection of human health are Office of Environmental Health Hazard Assessment (OEHHA) Screening Values (SVs).

[3]Freshwater fish tissue targets for protection of aquatic life and wildlife are from Water Quality Criteria 1972. A report of the Committee on Water Quality Criteria, Environmental Studies Board, National Academy of Sciences, National Academy of Engineering. Washington, D.C., 1972.

[4]Freshwater targets are from California Toxics Rule (2000).

[a] CMC: Criteria Maximum Concentration
[b] CCC: Continuous Criteria Concentration

The linkage between adverse effects in sensitive wildlife species and concentrations of the organochlorine pollutants in sediments, prey organisms and water is not well understood at the present time, although work is underway to better understand ecological risk in Newport Bay. In addition, the State is in the process of developing sediment quality objectives that should provide guidance for assessing adverse effects due to pollutant bioaccumulation. Reducing contaminant loads in the sediment will result in progress toward reducing risk to aquatic life and wildlife. During implementation of these TMDLs, additional and/or modified wildlife or other targets will be identified as risk assessment information becomes available. These TMDLs will be revisited (see 4.b.3) and revised as appropriate.

4.b.2. Organochlorine Compounds TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

The organochlorine compounds TMDLs for San Diego Creek and its tributaries, Upper Newport Bay and Lower Newport Bay are shown in Tables NB-OCs-6 and NB-OCs-7. The TMDLs are expressed on a daily basis (average grams per day) in Table NB-OCs-6, and on an annual basis (grams per year) in Table NB-OCs-7. Expression of the TMDLs on a daily basis is intended to comply with a relevant court decision. However, because of the strong seasonality associated with the loading of organochlorine compounds during storm events, it is appropriate for implementation to occur based on average annual loadings. The TMDLs are to be achieved as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this Basin Plan Amendment (BPA))*.

Table NB-OCs-6. TMDLs for San Diego Creek, Upper and Lower Newport Bay (expressed on a "daily" basis to be consistent with the D.C. Circuit Court of Appeals decision in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015 [D.C. Cir.2006])

Water Body	Pollutant	TMDL (average grams per day)[a]
San Diego Creek and Tributaries	Total DDT	1.08
	Toxaphene	0.02
Upper Newport Bay	Total DDT	0.44
	Chlordane	0.25
	Total PCBs	0.25
Lower Newport Bay	Total DDT	0.16
	Chlordane	0.09
	Total PCBs	0.66

[a] Compliance to be achieved as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.

Table NB-OCs-7. TMDLs for San Diego Creek, Upper and Lower Newport Bay (expressed on annual basis for implementation purposes)

Water Body	Pollutant	TMDL (grams per year)[a]
San Diego Creek and Tributaries	Total DDT	396
	Toxaphene	6
Upper Newport Bay	Total DDT	160
	Chlordane	93
	Total PCBs	92
Lower Newport Bay	Total DDT	59
	Chlordane	34
	Total PCBs	241

[a] Compliance to be achieved as soon as possible but no later than ~~December 31, 2015~~ *seven years from the date of OAL approval of this BPA*).

Informational TMDLs for San Diego Creek and its tributaries for chlordane and total PCBs are shown in Table NB-OCs-8. Again, these informational TMDLs are expressed on average daily and annual bases.

Table NB-OCs-8. Informational TMDLs for San Diego Creek and Tributaries (expressed on average daily and annual bases)

Water Body	Pollutant	TMDL (average grams per day)
San Diego Creek and Tributaries	Chlordane	0.70
	Total PCBs	0.34
		TMDL (grams per year)
San Diego Creek and Tributaries	Chlordane	255
	Total PCBs	125

Wasteload and load allocations to achieve the TMDLs specified in Tables NB-OCs-6 and NB-OCs-7 are shown in Tables NB-OCs-9 and NB-OCs-10, respectively. Like the TMDLs, the allocations are expressed in terms of both average daily and annual loads. An explicit margin of safety (MOS) of ten percent was applied in calculating the allocations. Consistent with the TMDL compliance schedule, these allocations are to be achieved as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.

Wasteload and load allocations necessary to meet the informational TMDLs shown in Table NB-OCs-8 are identified in Tables NB-OCs-11 (expressed as average daily loads) and NB-OCs-12 (expressed as annual loads). These allocations are identified only for informational purposes.

4.b.3. Implementation of Organochlorine Compounds TMDLs

These TMDLs are to be implemented within an adaptive management framework, with compliance monitoring, special studies, and stakeholder interaction guiding the process over time. Information obtained from compliance monitoring will measure progress towards achievement of WLAs and LAs, potentially leading to changes to TMDL allocations; ongoing investigations and recommended special studies, if implemented, may provide information that leads to revisions of the TMDLs, adjustments to the implementation schedule, and/or improved implementation strategies. Thus, implementation of the TMDLs is expected to be an ongoing and dynamic process.

The implementation plan identified in this section reflects the adaptive management, phased approach to the organochlorine compound TMDLs adopted by the Regional Board. The Board found a phased approach, with compliance schedules, appropriate in light of the following considerations. First, it was recognized that additional monitoring and special studies were either already underway or would be needed to address data limitations and significant uncertainty associated with the TMDL calculations, and that changes to the TMDLs might be appropriate based on the results of those investigations. Second, it was also understood that these data limitations and uncertainties pertained to the impairment assessment itself and the determination of the specific organochlorine compounds for which TMDLs are required. Third, the natural attenuation of these compounds over time is expected to affect significantly the selection, development and implementation of ~~TMDLs~~ BMPs. As described in the TMDL technical report [Ref.1], use of the organochlorine compounds addressed by these TMDLs has been banned for many years and trend analyses indicate declining concentrations of these substances in fish tissue over time. Natural attenuation should eventually reduce organochlorine pollutant levels to concentrations that pose no threat to beneficial uses in San Diego Creek or Newport Bay. While natural degradation of these compounds is likely the principal cause of the observed decline in fish tissue concentrations, the implementation of erosion and sediment controls and other Best Management Practices to address compliance with the sediment and nutrient TMDLs for Newport Bay and its watershed (see

Table NB-OCs-9. TMDLs and Allocations for San Diego Creek, Upper and Lower Newport Bay (expressed on a "daily" basis to be consistent with the recent D.C. Circuit Court of Appeals decision in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015 [D.C. Cir.2006]).[a,b]

	Type	Total DDT	Chlordane	Total PCBs	Toxaphene
		(average grams/day)			
San Diego Creek					
WLA	Urban Runoff – County MS4 (36%)	0.35			0.005
	Construction (28%)	0.27			0.004
	Commercial Nurseries (4%)	0.04			0.001
	Caltrans MS4 (11%)	0.11			0.002
	Subtotal – WLA (79%)	**0.77**			**0.01**
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.05			0.001
	Open Space (9%)	0.09			0.001
	Streams &Channels (2%)	0.02			0.0003
	Undefined (5%)	0.05			0.001
	Subtotal – LA (21%)	**0.21**			**0.003**
MOS (10% of total TMDL)		**0.11**			**0.002**
Total TMDL		**1.08**			**0.02**
Upper Newport Bay					
WLA	Urban Runoff - County MS4 (36%)	0.14	0.08	0.08	
	Construction (28%)	0.11	0.06	0.06	
	Commercial Nurseries (4%)	0.02	0.01	0.01	
	Caltrans MS4 (11%)	0.04	0.03	0.02	
	Subtotal – WLA (79%)	**0.31**	**0.18**	**0.18**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.02	0.01	0.01	
	Open Space (9%)	0.04	0.02	0.02	
	Streams & Channels (2%)	0.01	0.005	0.005	
	Undefined (5%)	0.02	0.01	0.01	
	Subtotal – LA (21%)	**0.08**	**0.05**	**0.05**	
MOS (10% of Total TMDL)		**0.04**	**0.03**	**0.03**	
Total TMDL		**0.44**	**0.25**	**0.25**	
Lower Newport Bay					
WLA	Urban Runoff – County MS4 (36%)	0.05	0.03	0.21	
	Construction (28%)	0.04	0.02	0.17	
	Commercial Nurseries (4%)	0.01	0.003	0.02	
	Caltrans MS4 (11%)	0.02	0.01	0.07	
	Subtotal – WLA (79%)	**0.11**	**0.07**	**0.47**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.01	0.004	0.03	
	Open Space (9%)	0.01	0.01	0.05	
	Streams & Channels (2%)	0.003	0.002	0.01	
	Undefined (5%)	0.01	0.004	0.03	
	Subtotal – LA (21%)	**0.03**	**0.02**	**0.12**	
MOS (10% of Total TMDL)		**0.02**	**0.01**	**0.07**	
Total TMDL		**0.16**	**0.09**	**0.66**	

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the Total TMDL. Percent WLA and Percent LA add to 100%.

[b] Compliance to be achieved as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA).*

Table NB-OCs-10. TMDLs and Allocations for San Diego Creek, Upper and Lower Newport Bay (expressed on an "annual" basis for implementation purposes). [a, b]

		Total DDT	Chlordane	Total PCBs	Toxaphene
	Type	(grams per year)			
San Diego Creek					
WLA	Urban Runoff – County MS4 (36%)	128.3			1.9
	Construction (28%)	99.8			1.5
	Commercial Nurseries (4%)	14.3			0.2
	Caltrans MS4 (11%)	39.2			0.6
	Subtotal – WLA (79%)	**281.6**			**4.3**
LA	Agriculture (5%) (excludes nurseries under WDRs)	17.8			0.3
	Open Space (9%)	32.1			0.5
	Streams & Channels (2%)	7.1			0.1
	Undefined (5%)	17.8			0.3
	Subtotal – LA (21%)	**74.8**			**1.1**
MOS (10% of Total TMDL)		**40**			**0.6**
Total TMDL		**396**			**6**
Upper Newport Bay					
WLA	Urban Runoff – County MS4 (36%)	51.8	30.1	29.8	
	Construction (28%)	40.3	23.4	23.2	
	Commercial Nurseries (4%)	5.8	3.3	3.3	
	Caltrans MS4 (11%)	15.8	9.2	9.1	
	Subtotal – WLA (79%)	**113.8**	**66.1**	**65.4**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	7.2	8	7	
	Open Space (9%)	13.0	7.6	7.5	
	Streams & Channels (2%)	2.9	1.7	1.7	
	Undefined (5%)	7.2	4.2	4.2	
	Subtotal – LA (21%)	**30.2**	**21.4**	**20.3**	
MOS (10% of Total TMDL)		**16**	**9**	**9**	
Total TMDL		**160**	**93**	**92**	
Lower Newport Bay					
WLA	Urban Runoff – County MS4 (36%)	19.1	11.0	78.1	
	Construction (28%)	14.9	8.6	60.7	
	Commercial Nurseries (4%)	2.1	1.2	8.7	
	Caltrans MS4 (11%)	5.8	3.4	23.9	
	Subtotal – WLA (79%)	**41.9**	**24.2**	**171.4**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	2.7	1.5	10.8	
	Open Space (9%)	4.8	2.8	19.5	
	Streams & Channels (2%)	1.1	0.6	4.3	
	Undefined (5%)	2.7	1.5	10.8	
	Subtotal – LA (21%)	**11.2**	**6.4**	**45.5**	
MOS (10% of Total TMDL)		**5.9**	**3.4**	**24**	
Total TMDL		**59**	**34**	**241**	

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the total TMDL. Percent WLA and Percent LA add to 100%.

[b] Compliance to be achieved as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.

Table NB-OCs-11. Informational TMDLs and Allocations for San Diego Creek (expressed on a "daily" basis) [a]

Category	Type	Chlordane	Total PCBs
		(average grams per day)	
San Diego Creek			
WLA	Urban Runoff – County MS4 (36%)	0.23	0.11
	Construction (28%)	0.18	0.09
	Commercial Nurseries (4%)	0.03	0.01
	Caltrans MS4 (11%)	0.07	0.03
	Subtotal – WLA (79%)	**0.50**	**0.24**
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.03	0.02
	Open Space (9%)	0.06	0.03
	Streams &Channels (2%)	0.01	0.01
	Undefined (5%)	0.03	0.02
	Subtotal – LA (21%)	**0.13**	**0.08**
MOS (10% of total TMDL)		**0.07**	**0.03**
Total TMDL		**0.70**	**0.34**

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the Total TMDL. Percent WLA and Percent LA add to 100%.

Table NB-OCs-12. Informational TMDLs and Allocations for San Diego Creek (expressed on an "annual" basis) [a]

Category	Type	Chlordane	Total PCBs
		(grams per year)	
San Diego Creek			
WLA	Urban Runoff – County MS4 (36%)	82.6	40.5
	Construction (28%)	64.3	31.5
	Commercial Nurseries (4%)	9.2	4.5
	Caltrans MS4 (11%)	25.2	12.4
	Subtotal – WLA (79%)	**181.3**	**88.9**
LA	Agriculture (5%) (excludes nurseries under WDRs)	11.5	5.6
	Open Space (9%)	20.7	10.1
	Streams &Channels (2%)	4.6	2.3
	Undefined (5%)	11.5	5.6
	Subtotal – LA (21%)	**48.2**	**23.6**
MOS (10% of total TMDL)		**26**	**13**
Total TMDL		**255**	**125**

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the total TMDL. Percent WLA and Percent LA add to 100%.

discussions of these TMDLs elsewhere in this Basin Plan) is a probable factor. In any case, the observed trends suggest that as monitoring continues in the watershed and pollutant levels decline, some or all of the organochlorine compounds may warrant delisting from the Clean Water Act Section 303(d) list of impaired waters. Again, these TMDLs would need to be revisited accordingly.

This implementation plan also reflects recommendations by regulated stakeholders in the Newport Bay watershed to convene a Working Group to develop and implement a comprehensive Work Plan to: address, as an early action item, the technical uncertainties in these TMDLs and make recommendations for revisions, as appropriate; identify and prioritize tasks necessary to implement the TMDLs; integrate TMDL implementation tasks with those already being conducted in response to other programs (e.g., permits, other TMDLs); and, investigate other pollutants of concern in the watershed.

Table NB-OCs-13 lists the tasks and schedules needed to implement the organochlorine TMDLs. This implementation plan is aimed at identifying actions to accelerate the decline in organochlorine compound concentrations in the watershed, and to augment their natural attenuation. The implementation plan is focused to a large extent on the monitoring and, where necessary, enhanced implementation of Best Management Practices (BMPs) to reduce the erosion and transport to surface waters of fine sediment to which the organochlorine compounds tend to adhere. Many of these BMPs are already in place as the result of existing permits issued by the Regional Board or State Water Resources Control Board for stormwater and construction activities, and/or in response to established TMDLs. The intent is to

assure that source control activities are implemented to reduce any active sources of the organochlorine compounds, and in other areas where such actions will be most effective in meeting the TMDL goals. Monitoring and special study requirements are included to provide for TMDL compliance assessment and refinement.

In response to the recommendation by watershed stakeholders, this implementation plan provides an opportunity for dischargers to participate in the development and implementation of a comprehensive Work Plan. The implementation tasks identified in Table NB-OCs-13 (except Tasks 1 and 4; see discussion of Task 7, below) will be considered in the development of the Work Plan and incorporated, as appropriate. Implementation of the Work Plan, which will be approved by the Regional Board at a public hearing, will obviate the need for individual actions on the tasks in Table NB-OCs-13 by members of the Working Group. Completion of the Work Plan will result, in part, in recommendations for revisions to these TMDLs based on review by an Independent Advisory Panel and the results of ongoing or requisite monitoring and investigations, and in the development of a comprehensive plan for BMPs and other actions needed to assure compliance with the TMDLs, wasteload allocations and load allocations as soon as possible after completion of execution of the Work Plan but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*[1]. Dischargers who elect not to participate in the Work Plan approach will be required to implement the tasks shown in Table NB-OCs-13, as appropriate.

Each of the tasks identified in Table NB-OCs-13 is described below.

[1] This compliance schedule and/or the organochlorine compounds TMDLs may be modified, through the Basin Planning process, in response to information provided by implementation of the Work Plan tasks and/or other investigations.

Table NB-OCs-13. Organochlorine Compounds TMDLs Implementation Tasks and Schedule

Task	Description	Compliance Date – As Soon As Possible But No Later Than [b,c]
PHASE I IMPLEMENTATION		
1	Revise existing WDRs and NPDES permits: *Commercial Nursery WDRs, MS4 Permit, Other NPDES Permits*	Upon OAL approval of BPA and permit renewal
2[a]	a. Develop proposed agricultural BMP and monitoring program to assess and control OCs discharges. b. Implement program	a. (*3 months after OAL approval of BPA*) b. Upon Regional Board approval
3[a]	a. Identify responsible parties for open space areas b. Develop proposed monitoring program to assess OCs inputs from open space areas c. Implement proposed monitoring program d. Develop plan to implement effective erosion and sediment control BMPs for management of fine particulates (if found necessary based on monitoring results) e. Implement BMP plan	a.(*1 month after OAL approval of BPA*) b. 2 months after notification of responsible parties c. Upon Regional Board approval d. Within 6 months of notification of need to develop plan e. Upon Regional Board approval
4[a]	Implement effective sediment and erosion control BMPs for management of fine particulates on construction sites: Regional Board: a. Develop SWPPP Improvement Program MS4 permittees: b. Revise planning processes as necessary to assure proper communication of SWPPP requirements c. Evaluate/implement BMPs effective in reducing/eliminating organochlorine discharges: i. Submit proposed plan and schedule for BMP studies and implement plan ii. Submit studies report; including plan and schedule to implement BMPs/include in Guidance Manual iii. Implement BMPs/include in Guidance Manual	a. (*Upon OAL approval of BPA*) b. Within 3 months of appropriate revision of the MS4 permit c. i. Submit plan within 3 months of 13267 letter issuance/MS4 permit revision and implement upon Executive Officer approval; ii. Within 6 months of completion of studies plan; iii. Upon Executive Officer approval
5[a]	Evaluate sources of OCs; develop and implement BMPs accordingly: a. Submit proposed plan and schedule for source	a. Submit plan within 3 months of 13267 letter issuance/appropriate revision of the MS4 permit

	area investigations b. Implement investigation plan c. Submit report of investigation findings and plan/schedule for implementation of BMPs d. Implement BMP plan	b. Upon Executive Officer approval c. Within 6 months of completion of investigation plan d. Upon Executive Officer approval
6[a]	Evaluate feasibility and mechanisms to fund future dredging operations within San Diego Creek, Upper and Lower Newport Bay	Submit feasibility/funding report within *(3 years after OAL approval of BPA)*
7	Develop comprehensive Work Plan to meet TMDL implementation requirements, consistent with an adaptive management approach a. Convene Working Group b. Submit proposed Work Plan c. Implement Work Plan d. Complete execution of Work Plan	a. (*one month of OAL approval of BPA*) b. (*3 months after OAL approval of BPA)* c. Upon Regional Board approval d. Within 5 years of Work Plan approval
8[a]	Revise regional monitoring program	(*3 months after OAL approval of BPA)*; Annual Reports due November 15
9	Conduct special studies	As funding allows, and in order of priority identified in comprehensive Work Plan (Task 7), if applicable
PHASE II IMPLEMENTATION		
10	Review TMDLs, including numeric targets, WLAs and LAs; delist or revise TMDLs pursuant to established Sediment Quality Objectives, new data, and results of special studies	No later than (*5 years from OAL approval of BPA*)

a. The tasks and schedules identified in the Regional Board approved Work Plan developed by the Working Group shall govern implementation activities by members of the Working Group.

b. Final compliance with the TMDLs to be achieved no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA*).

c. The Regional Board may, after a public hearing, and without need for a Basin Plan amendment, revise the schedules in this table, except for the final compliance date of ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA*), if it determines good cause exists for such revisions.

Table NB-OCs-14. Existing NPDES Permits and WDRs Regulating Discharges in the Newport Bay Watershed

No.	Permit Title	Order No.	NPDES No.
1	Waste Discharge Requirements for the United States Department of the Navy, Former Marine Corps Air Station Tustin, Discharge to Peters Canyon Wash in the San Diego Creek/Newport Bay Watershed	R8-2006-0017	CA8000404
2	Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region - Areawide Urban Storm Water Runoff - Orange County (MS4 permit)	R8-2002-0010	CAS618030
3	National Pollutant Discharge Elimination System (NPDES) Permit Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)	99-06-DWQ	CAS000003
4	General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (de minimus) Threat to Water Quality	R8-2003-0061 as amended by R8-2005-0041 and R8-2006-0004	CAG998001
5	General Waste Discharge Requirements for Short-term Groundwater-Related Dischargers and De Minimus Wastewater Discharges to Surface Waters Within the San Diego Creek/Newport Bay Watershed	R8-2004-0021	CAG998002
6	General Groundwater Cleanup Permit for Discharges to Surface Waters of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Petroleum Hydrocarbons, Solvents and/or Petroleum Hydrocarbons mixed with Lead and/or Solvents	R8-2002-0007, as amended by R8-2003-0085 and R8-2005-0110	CAG918001
7	Waste Discharge Requirements for City of Tustin's 17th Street Desalter	R8-2002-0005	CA8000305
8	Waste Discharge Requirements for City of Irvine, Groundwater Dewatering Facilities, Irvine, Orange County,	R8-2005-0079	CA8000406
9	Waste Discharge Requirements for Bordiers Nursery, Inc.	R8-2003-0028	
10	Waste Discharge Requirements Hines Nurseries, Inc.	R8-2004-0060	
11	Waste Discharge Requirements for El Modeno Gardens, Inc., Orange County	R8-2005-0009	
12	Waste Discharge Requirements for Nakase Bros. Wholesale Nursery, Orange County	R8-2005-0006	

Phase I Implementation

Task 1: WDRs and NPDES Permits

The Regional Board shall review and revise, as necessary, existing NPDES permits and/or WDRs to incorporate the appropriate TMDL WLAs, compliance schedules, and monitoring program requirements. These permits are identified in Table NB-OCs-14. The appropriate TMDL WLAs, compliance schedules and monitoring program requirements shall be included in new NPDES permits/WDRs. The NPDES permits/WDRs shall specify TMDL-related provisions that apply provided that: (1) the dischargers are and remain members of the Working Group (see Task 7); and (2) the approved Work Plan developed by the Working Group is implemented in a timely and effective manner. The NPDES permit/WDRs shall also include TMDL-related provisions that apply if the discharger(s) do not participate or discontinue participation in the Working Group and/or if the approved Work Plan is not implemented effectively or in a timely manner.

Compliance with the TMDLs and wasteload allocations is to be achieved as soon as possible, but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*. The way that this deadline applies to a particular discharger differs depending on whether the discharger is participating in the Working Group:

1. Working Group Participants. Provisions in NPDES permits/WDRs issued during implementation of the Work Plan will specify the following for Working Group members:

(a) Interim effluent limitations. Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plan will constitute interim, performance-based effluent limitations to implement the wasteload allocations. Adhering to these interim effluent limitations satisfies the requirement, during the Work Plan implementation period, to achieve compliance with the TMDLs and wasteload allocations "as soon as possible."

(b) Final effluent limitations. Final effluent limitations based on the wasteload allocations will also be specified, with a schedule requiring compliance as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.[2] Compliance with the interim, performance-based limitations will fulfill the "as soon as possible" requirement. The NPDES permits/WDRs will specify further that the status of compliance with the final effluent limitations based on the wasteload allocations will be reviewed on an annual basis. Compliance with these limitations will be required prior to the completion of the Work Plan tasks, in accordance with a schedule approved by the Regional Board's Executive Officer, if it is demonstrated to the satisfaction of the Executive Officer that such earlier compliance is reasonably feasible.

[2] It is recognized that this schedule may exceed the five year terms of NPDES permits. This schedule will be reflected in subsequent renewals of these NPDES permits.

Following the completion of the Work Plan tasks, NPDES permits/WDRs will require dischargers to comply with wasteload allocations in the shortest practicable time, but in no event later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.

2. Non-Working Group Dischargers. For dischargers not participating in the Working Group, NPDES permit/WDR provisions will require compliance with the wasteload allocations as soon as possible after adoption of NPDES permits/WDRs that implement the TMDLs, but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA).* In this case, the determination of what constitutes "as soon as possible" will be at the discretion of the Regional Board's Executive Officer.

Completion of the Work Plan and/or other investigations conducted by the Regional Board or others may result in modification of the TMDLs, wasteload allocations and the compliance schedule through the Basin Planning process. Subsequent issuance/revision of NPDES permit/WDRs will implement any such changes.

Ultimate compliance with permit limitations based on wasteload allocations is expected to be based upon iterative implementation of effective BMPs to manage the discharge of fine sediments containing organochlorine compounds, along with monitoring to measure BMP effectiveness.

Permit revisions shall be accomplished as soon as possible upon approval of these TMDLs. Given Regional Board resource constraints and the need to consider other program priorities, permit revisions are likely to be tied to renewal schedules.

For commercial nurseries covered under existing WDRs, revisions of these WDRs shall address the following identified needs:

(1) Evaluation of sites to determine/verify potential storm water and nonstorm water discharge locations;
(2) Evaluation of current monitoring programs and methods of sampling and analysis for consistency with other monitoring efforts in the watershed;
(3) In cooperation with U .C. Cooperative Extension, evaluation of BMPs for adequacy and implementation of the most effective BMPs to reduce/eliminate the discharge of potentially-contaminated fine sediments in both storm water and non-storm water discharges;
(4) Monitoring to better quantify nursery runoff as a potential source of organochlorine compounds and to assure that load reductions are achieved; and
(5) Based on the results of the preceding tasks, development of a workplan to be submitted within one month of the effective date of these TMDLs that identifies: (a) the BMPs implemented to date and their effectiveness in reducing fine sediment and organochlorine compound discharges; (b) the

adequacy and consistency of monitoring efforts, and proposed improvements; (c) a plan and schedule for implementation of revised BMPs and monitoring protocols, where appropriate. It is recognized that most nursery operations are likely to be of very limited duration due to the expiration of land leases. The workplan shall identify recommendations for BMP and monitoring improvements that are effective, reasonable and practicable, taking this consideration into account. This workplan shall be implemented upon approval by the Regional Board Executive Officer.

Revisions to the Municipal Separate Storm Sewer System (MS4) permit (R8-2002-0010, NPDES No. CAS618030), including the monitoring program shall address the monitoring and BMP-related tasks identified below, as appropriate. The Regional Board will coordinate also with the State Water Resources Control Board regarding revision of the Caltrans permit to address these monitoring and BMP-related tasks. These include: oversight and implementation of construction BMPs (Task 4); organochlorine compound source evaluations (Task 5); assessment of dredging feasibility and identification of a funding mechanism (Task 6); and, revision of the regional monitoring program (Task 8).

NPDES permits that regulate discharges of ground water to San Diego Creek or its tributaries shall be reviewed and revised as necessary to require annual (at a minimum) monitoring, using the most sensitive analytical techniques practicable, to analyze for organochlorine compounds in the discharges. If organochlorine compounds are found to be present, the dischargers shall be required to evaluate whether and to what extent the discharges would cause or contribute to an exceedance of wasteload allocations and to implement appropriate measures to reduce or eliminate organochlorine compounds in the discharges. New NPDES permits issued for these types of discharges shall incorporate the same requirements.

These dischargers (nurseries, MS4 permittees, Caltrans, ground water dischargers) may address the specific requirements identified above through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

Task 2: Develop and Implement an Agricultural BMP and Monitoring Program

Apart from certain nurseries, agricultural operations in the watershed are not currently regulated pursuant to waste discharge requirements. The SWRCB's "Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program" (Nonpoint Source Policy) (2004) requires that all nonpoint source dischargers be regulated under WDRs, waivers of WDRs, Basin Plan prohibitions, or some combination of these three administrative tools. Board staff is developing recommendations for an appropriate regulatory approach to address agricultural discharges. It is expected that the Regional Board will be asked to consider these

recommendations and to approve a regulatory approach in late 2007. Appropriate load allocations to implement these TMDLs will be included in WDRs or a waiver of WDRs, if and when issued by the Regional Board to address discharges from agricultural operations.

In the interim, agricultural operators shall identify and implement a monitoring program to assess OCs discharges from their facilities, and identify and implement a BMP program designed to reduce or eliminate those discharges. The proposed monitoring and BMP program shall be submitted as soon as possible but no later than (*3 months from OAL approval of this Basin Plan Amendment (BPA)*). These monitoring and BMP programs will be components of the waste discharge requirements or conditional waiver of waste discharge requirements that Board staff will recommend to implement the Nonpoint Source Policy. Load allocations identified in these TMDLs will also be specified in the WDRs/waiver, with a schedule of compliance.

It is recognized that most agricultural operations are expected to be of very limited duration due to the expiration of land leases. The monitoring and BMP programs proposed by the agricultural operators should include recommendations that are effective, reasonable and practicable, taking this consideration into account. The BMP and monitoring programs shall be implemented upon approval by the Regional Board. The BMP and monitoring programs may be implemented individually or by a group or groups of agricultural operators.

In addition, responsible parties may address these BMP/monitoring program requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7). WDRs or conditional waivers of WDRs issued to agricultural operators pursuant to the Nonpoint Source Policy shall specify that for those operators who participate in the development and implementation of a Regional Board approved Work Plan, compliance with the TMDLs and load allocations is to be achieved as soon as possible, but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*. The way that this deadline applies to a particular agricultural operator differs depending on whether the operator is participating in the Working Group:

1. Working Group Participants. Provisions in WDRs or conditional waivers of WDRs issued during implementation of the Work Plan will specify the following for Working Group members:

(a) Interim limitations: Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plan will constitute interim, performance-based limitations to implement the load allocations. Adherence to these interim limitations satisfies the requirement, during the Work Plan implementation period, to achieve compliance with the TMDLs and load allocations "as soon as possible."

(b) Final limitations: Final limitations based on the load allocations will also be specified in the WDRs/waivers, with a schedule requiring compliance as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*. Compliance with the interim, performance-based limitations will fulfill the "as soon as possible" requirement. The WDRs/waivers will specify further that the status of compliance with the final limitations based on the load allocations will be reviewed on an annual basis. Compliance with these limitations will be required prior to the completion of the Work Plan tasks, in accordance with a schedule approved by the Regional Board's Executive Officer, if it is demonstrated to the satisfaction of the Executive Officer that such earlier compliance is reasonably feasible.

Following the completion of the Work Plan tasks, WDRs/waivers will require agricultural operators to comply with load allocations in the shortest practicable time, but in no event later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.

2. Non-Working Group Dischargers. For agricultural operators not participating in the Working Group, provisions in WDR/waivers of WDRs will require compliance with the load allocations as soon as possible after adoption of WDRs/waivers of WDRs that implement the TMDLs, but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA).* In this case, the determination of what constitutes "as soon as possible" will be at the discretion of the Regional Board's Executive Officer.

Completion of the Work Plan and/or other investigations conducted by the Regional Board or others may result in modification of the TMDLs, load allocations and the compliance schedule through the Basin Planning process. Subsequent issuance/revision of WDRs/conditional waivers of WDRs will implement any such changes.

Task 3: Identify Parties Responsible for Open Space Areas; Develop and Implement an OCs Monitoring Program to Assess Open Space Discharges; Develop and Implement an OCs BMP Program, if Necessary

Nonpoint source discharges from open space are also subject to State regulation. During Phase I of these TMDLs, sufficient data shall be collected by the responsible parties to determine whether discharges of OCs from designated open space, as well as discharges resulting from erosion in and adjacent to unmodified streams, are causing or contributing to exceedances of water quality objectives and/or impairment of beneficial uses of San Diego Creek and Newport Bay. With the assistance of the stakeholders, Regional Board staff will identify the responsible parties as soon as possible but no later than (*one month from OAL approval of this BPA*). Board staff will notify the identified responsible parties of their obligation to propose an

organochlorine compound monitoring program within two months of notification. The monitoring program shall be implemented upon Regional Board approval.

Based on the results of this monitoring program, the responsible parties shall develop a BMP implementation plan within 6 months of notification by the Regional Board's Executive Officer of the need to do so. The responsible parties shall implement that plan upon Regional Board approval.

The responsible parties may address these monitoring and BMP implementation program requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

The Regional Board will consider whether WDRs or a WDR waiver is necessary and appropriate for responsible parties not currently regulated, based on the monitoring results. WDRs or a WDR waiver, if issued, will include appropriate load allocations to implement these TMDLs. For responsible parties compliance with the TMDLs and load allocations is to be achieved as soon as possible, but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*. The way that this deadline applies to a particular responsible party differs depending on whether that responsible party is participating in the Working Group:

1. Working Group Participants. Provisions in WDRs or conditional waivers of WDRs issued during implementation of the Work Plan will specify the following for Working Group members:

(a) Interim limitations: Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plan will constitute interim, performance-based limitations to implement the load allocations. Adherence to the interim, performance-based limitations satisfies the requirement, during the Work Plan implementation period, to achieve compliance with the TMDLs and load allocations "as soon as possible."

(b) Final limitations: Final limitations based on the load allocations will also be specified in the WDRs/waivers, with a schedule requiring compliance as soon as possible but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*. Compliance with the interim, performance-based limitations will fulfill the "as soon as possible" requirement. The WDRs/waivers will specify further that the status of compliance with the final limitations based on the load allocations will be reviewed on an annual basis. Compliance with the final limitations will be required prior to the completion of the Work Plan tasks, in accordance with a schedule approved by the Regional Board's Executive Officer, if it is demonstrated to the satisfaction of the Executive Officer that such earlier compliance is reasonably feasible.

Following the completion of the Work Plan tasks, WDRs/waivers will require responsible parties to comply with load allocations in the shortest practicable time, but in no event later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*.

2. Non-Working Group Dischargers. For responsible parties not participating in the Working Group, compliance with the load allocations will be as soon as possible after TMDLs adoption and approval, but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*. In this case, the determination of what constitutes "as soon as possible" will be at the discretion of the Regional Board's Executive Officer.

Completion of the Work Plan and/or other investigations conducted by the Regional Board or others may result in modification of the TMDLs, load allocations and the compliance schedule through the Basin Planning process. Subsequent issuance/revision of WDRs/conditional waivers of WDRs will implement any such changes.

Task 4: Develop and Implement Appropriate BMPs for Construction Activities

Currently, all construction activities in the watershed are regulated under the State Water Resource Control Board's (SWRCB) General Permit for Discharge of Storm Water Runoff Associated with Construction Activity (Order No. 99-08-DWQ, NPDES No. CAS000002; the "General Construction Permit"), SWRCB National Pollutant Discharge Elimination System (NPDES) Permit Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans) (Order No. 99-06-DWQ, NPDES No. CAS000003; the Caltrans MS4 permit), and/or the Orange County MS4 NPDES permit. The requirements of these permits and an iterative, adaptive-management BMP approach, coupled with monitoring, are the foundation for meeting the TMDL WLAs for construction. The General Construction Permit, and the Orange County and Caltrans MS4 permits are expected to be revised over time. The specific tasks identified below may be addressed by revisions to one or more of these permits. In that case, the Regional Board will integrate requirements for implementation of this Task with the requirements of the Orange County and Caltrans MS4/General Construction permits so as to prevent conflict and/or duplication of effort.

To assure that effective construction BMPs are identified and implemented, program improvements are needed in the following areas: (a) Storm Water Pollution Prevention Plans (SWPPPs) prepared in response to the General Construction Permit must include supporting documentation and assumptions for selection of sediment and erosion control BMPs, and must state why the selected BMPs will meet the Construction WLAs for the organochlorine compounds; (b) SWPPP provisions must be rigorously implemented on construction sites; (c) sampling and analysis for the organochlorine pesticides and PCBs in storm and nonstorm discharges containing sediment from construction sites is necessary to determine

the efficacy of BMPs, as well as compliance with the construction WLAs; sampling and analysis plans must be included in SWPPPs; (d) additional BMPs, including enhanced BMPs, must be evaluated to determine those that may be appropriate for reducing or eliminating organochlorine compound discharges from construction sites (e.g., BMPs effective in control of fine particulates) without significant adverse environmental effects (e.g., toxicity that might result from improper storage and/or application of polymers); (e) outreach is necessary to assure the effective implementation of these SWPPP requirements; and (e) enforcement of the SWPPP requirements is necessary.

To address these program improvements, Regional Board staff shall develop a SWPPP Improvement Program that identifies the Regional Board's expectations with respect to the content of SWPPPs, including documentation regarding the selection and implementation of BMPs, and a sampling and analysis plan. The Improvement Program shall include specific guidance regarding the development and implementation of monitoring plans, including the constituents to be monitored, sampling frequency and analytical protocols. The SWPPP Improvement Program shall be completed by (*the date of OAL approval of this BPA*). No later than two months from completion of the Improvement Program, Board staff shall assure that the requirements of the Program are communicated to interested parties, including dischargers with existing authorizations under the General Construction Permit. Existing, authorized dischargers shall revise their project SWPPPs as needed to address the Program requirements as soon as possible but no later than (*three months of completion of the SWPPP Improvement Program*). Applicable SWPPPs that do not adequately address the Program requirements shall be considered inadequate and enforcement by the Regional Board shall proceed accordingly. The Caltrans and Orange County MS4 permits shall be revised as needed to assure that the permittees communicate the Regional Board's SWPPP expectations, based on the SWPPP Improvement Program, with the Standard Conditions of Approval.

The MS4 permittees shall conduct studies to evaluate BMPs that are most appropriate for reducing or eliminating organochlorine compound discharges from construction sites (e.g., fine particulates), including advanced treatment BMPs. The evaluation shall consider the potential for adverse environmental effects associated with implementation of each of the BMPs identified. MS4 Permittees shall include these BMPs in the Orange County Stormwater Program Construction Runoff Guidance Manual and the Caltrans Storm Water Management Plan (SWMP). Implementation of these MS4 permittee requirements shall commence upon issuance of appropriate Water Code Section 13267 letters or renewal of the MS4 permits, whichever occurs first. The Section 13267 letters/revised permits shall require the permittees to: (a) submit a proposed plan and schedule for studies to evaluate appropriate BMPs, as described above, within three months of issuance of the 13267 letter or permit revision; (b) implement the plan and schedule upon approval by the Regional Board's Executive Officer; (c) submit a report of the BMP investigations within 6 months of approval of the study plan, provided that sufficient storms, as defined in the study plan, have occurred within that period. If the number

of storms does not conform to the study plan, then the report shall be submitted in accordance with a schedule approved by the Executive Officer once the requisite number of storms has occurred. The report shall include a proposed plan and schedule for implementation of the BMPs, as appropriate, and inclusion of the BMPs in the Orange County Guidance Manual and in the Caltrans SWMP and related guidance documents; (d) implement the BMP plan upon approval by the Executive Officer.

The MS4 permittees may address these SWPPP and construction site BMP-related requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

Task 5: Evaluate Sources of OCs to San Diego Creek and Newport Bay; Identify and Implement Effective BMPs to Reduce/Eliminate Sources

Based on the regional monitoring program being implemented by the Orange County MS4 permittees and/or on the results of other monitoring and investigations, all MS4 permittees shall conduct source analyses in areas tributary to the MS4 system demonstrating elevated concentrations of OCs. Based on mass emissions monitoring (described below) and source analysis, the permittees shall implement additional/enhanced BMPs as necessary to ensure that organochlorine discharges from significant land use sources to surface waters are reduced or eliminated. As part of the investigation task, if the results indicate that additional OCs soil remediation is necessary on MCAS Tustin and MCAS El Toro, the responsible parties for such remediation will be identified. The responsible party will be tasked to implement those portions of the BMP plan identified for the responsible party for MCAS Tustin and MCAS El Toro.

The permittees shall develop and implement a collection program for all banned OC pesticides and PCBs. This type of program has had demonstrated success in other geographic areas in collecting and disposing of banned pesticides. Residents and businesses in the watershed may have stored legacy pesticides that could be collected through such a program; if this is the case, this task would prevent future use and improper disposal of these banned pesticides.

Implementation of these requirements shall commence upon issuance of appropriate Water Code Section 13267 letters or approval of an appropriately revised MS4 permits, whichever occurs first. Revisions to the Orange County MS4 permit and Caltrans SWMP shall implement requirements specified in applicable Section 13267 letters, if used to implement TMDL-related requirements. The 13267 letters/revised permit shall specify require the permittees to: (a) submit a proposed plan and schedule for source analyses of MS4 tributary areas with elevated OCs concentrations within 3 months of issuance of the 13267 letters or permit revision: (b) implement the proposed plan upon approval by the Regional Board's Executive Officer; (c) submit a report within 6 months of completion of the approved study plan.

The report shall provide the study results and include a proposed plan and schedule for prioritized implementation of BMPs in OCs source areas; (d) implement the BMP plan upon Executive Officer approval.

The permittees may address these requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (Task 7).

Task 6: Evaluate Feasibility and Mechanisms to Fund Future Dredging Operations

Because large-scale erosion and sedimentation primarily occurs during large storm events, traditional BMPs may have limited success in reducing/eliminating the discharge of potentially-contaminated sediments to receiving waters during wet weather. In such cases, dredging within Newport Bay and/or San Diego Creek may be the most feasible and appropriate method of reducing OCs loads in these waters. However, the feasibility and effectiveness of dredging projects in removing OCs would require careful consideration, since dredging may or may not expose sediments with higher concentrations of OCs. Financing of such projects is also a significant consideration.

Entities discharging potentially contaminated sediment in the watershed shall analyze the feasibility of dredging to achieve water quality standards, and shall identify funding mechanisms for ensuring that future dredging operations can be performed, as necessary, within San Diego Creek, Upper and Lower Newport Bay. A report that presents the results of this effort shall be submitted no later than (*three years from the date of OAL approval of this BPA)*. It is recognized that dredging activities are likely to be an integral part of efforts to comply with other established TMDLs, particularly the sediment TMDL. Ideally, dredging feasibility and funding investigations would be integrated with implementation and review of the sediment TMDL through the comprehensive Work Plan (Task 7). The responsible parties may address this Task requirement through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan.

Task 7: Develop a Comprehensive Work Plan to Meet TMDL Implementation Requirements, Consistent with the Adaptive Management Approach

During the development of these organochlorine compounds TMDLs, regulated stakeholders in the Newport Bay watershed expressed concerns that the numeric targets used to develop the TMDLs, wasteload allocations and load allocations were flawed and that scientific review by an independent panel of experts was necessary. Further, these stakeholders suggested that pollutants other than the organochlorine compounds, such as metals, pyrethrins or other, emerging pollutants may pose the more real or significant threat to beneficial uses in the watershed. Finally, it was

recommended that an integrated approach to TMDL implementation, and to the development of pending TMDLs and refinement of established TMDLs, would be a more effective and efficient approach.

Substantial efforts are already being made by many stakeholders in the watershed to address established permit and/or TMDL requirements for BMP implementation and monitoring and to conduct special investigations to understand and improve water quality conditions in the watershed. Thus, the framework exists to develop a comprehensive watershed plan for addressing water quality, not only as it relates to the organochlorine compounds, but on a larger scale that encompasses all sources of water quality impairment.

This implementation plan provides the opportunity for regulated stakeholders to form a Working Group and to participate in the development and implementation of a comprehensive Work Plan to evaluate the scientific basis of these organochlorine TMDLs, to prioritize TMDL implementation tasks, to integrate implementation with other TMDL and/or permit requirements, and to investigate unknown sources of toxicity in the watershed. As noted in the previous Task descriptions, participation by responsible parties in the Working Group and the development and implementation of a Regional Board Work Plan would address the responsible parties' obligations pursuant to the Tasks in Table NB-OCs-13. Dischargers who elect not to participate in the Working Group/Work Plan will be required to implement these Tasks, as described above.

Dischargers interested in participating in a Working Group to develop and implement a comprehensive Work Plan must commit to do so by (*within one month of OAL approval of the BPA*). Submittal of a draft Work Plan is required no later than (*three months of OAL approval of the BPA*). The schedules for implementation of the tasks identified in the Work Plan must reflect the shortest practicable time necessary to complete the tasks. Implementation of the Work Plan will commence upon approval of the Work Plan by the Regional Board at a properly noticed public hearing. Execution of the Work Plan must be complete within five years of Regional Board approval. Substantive changes to the tasks and schedules included in the approved Work Plan are contingent on Regional Board approval at a subsequent, properly noticed public hearing(s). However, the Regional Board's Executive Officer is authorized to revise the approved tasks and schedules if no significant comments are received during the public notice period.

At a minimum, the expected result of the execution of the Work Plan is a comprehensive, watershed plan for BMP implementation, monitoring, special investigations and other actions that will assure compliance with the OCs TMDLs, as they may be amended, as soon as possible after completion of execution of the Work Plan but no later than ~~December 31, 2015~~ *(seven years from the date of OAL approval of this BPA)*[3].

[3] This compliance date is subject to change through the Basin Planning process.

The specific detailed Work Plan tasks and schedules will be determined as the Work Plan is developed. Regional Board staff will work with the Working Group to identify a suitable Work Plan. Key initial tasks are expected to include the following:

1. Convene an Independent Advisory Panel (IAP) of experts with relevant expertise. To avoid questions of objectivity, the panel shall be convened by a neutral third party organization such as the National Water Research Institute. The Working Group and Regional Board staff will work together to define the desired qualifications needed for IAP participants, define the scope and authority of the IAP, and identify and describe the primary issues that will require guidance, recommendations, or specific actions from the IAP.

2. Re-evaluate OCs TMDLs Numeric Targets and Loads

With input and recommendations from the IAP, and using data being generated through ongoing scientific investigations in the watershed, the Work Plan should assess the current OCs TMDLs numeric targets, evaluate potential alternative numeric targets, and determine if the current targets should be revised, or whether targets based on site-specific data can be developed. If site-specific targets can be developed, the process or methods that will be used to develop targets should be determined, such as risk assessments or re-calculation of targets using accepted, peer-reviewed scientific methodologies.

It is recognized that there is a need for flexibility to respond to unanticipated findings and events, and to changes that may be recommended by the Independent Advisory Panel (see below). However, at a minimum, each of the Tasks identified in Table NB-OCs-13 (except Task 1, which requires action by the Regional Board, and Task 4, which requires action by the Regional Board and the MS4 permittees based on established MS4 permit requirements) must be considered in Work Plan development and implementation. If one or more of these tasks is not proposed for inclusion in the Work Plan, or where modifications of these tasks/schedules are recommended, a written description and justification must be provided with the draft Work Plan submittal. In addition, consideration shall be given to the following:

Develop conceptual models

Data interpretation and monitoring must be organized around a systematic conceptual view of the sources of the different organochlorine compounds and their distribution and behavior in the watershed. Development of conceptual models for these compounds would significantly enhance our understanding of their sources and impacts and would help to structure hypothesis development, monitoring design, and data interpretation. Development of the conceptual models should be based on a review of available data and information about the OCs in the watershed, and the models should be updated as new information accumulates. Characterization

of sources and of habitats at risk should be based on a review of available data, framed in terms of the conceptual models and supported with the collection of new data as needed. It is expected that the IAP would provide critical review and recommendations in this process.

Develop Information Management System

Different types of data – water column, sediment, fish or bird egg tissue, infaunal surveys, hydrology, etc. – are being or will be collected throughout the Newport Bay watershed through a variety of studies, monitoring programs, or other projects. Since these data are often collected for different purposes (e.g., in response to various TMDLs and/or permits), at different times and in different areas, much of the data may be in non-comparable formats, redundant, or not spatially or temporally compatible. In order to determine what data are useful or significant, where data gaps may still occur, or where current data needs are sufficient, a comprehensive information management system should be developed that (1) establishes clear procedures for assessing data quality for data acquisition and transfer and for control of evolving versions of datasets; (2) is a relational database that can manage the variety of data types and has appropriate mechanisms for ensuring and maintaining data quality; (3) can conduct quality control checks and needed reformatting to ensure needed consistency across all data types and sources as data from other sources are obtained; (4) provides for straightforward query and data sub-setting routines to streamline access to the data; and (5) ensures that GIS capability is available for analysis, modeling, and presentation purposes. Development of a comprehensive information management system will allow for the identification of significant data gaps that need to be addressed and will provide a vehicle for establishing monitoring guidelines and preventing redundant or superfluous data collection.

To the extent that there are any conflicts between the individual tasks and schedules identified in Table NB-OCs-13, and the prioritized plan and schedule identified in the Work Plan, the Work Plan would govern implementation activities with respect to the stakeholders responsible for Work Plan development and implementation as part of the Working Group.

Task 8: Revise Regional Monitoring Program

The County of Orange, as Principal Permittee under the County's MS4 permit, oversees the countywide monitoring program. Implementation of the monitoring program is supported by funds shared proportionally by each of the Permittees named in the Orange County MS4 permit. Some monitoring requirements identified in this implementation plan are already reflected in the current program.

By (*3 months from OAL approval of BPA),* the Orange County MS4 permittees shall: (1) document each of the current monitoring program elements that addresses the monitoring requirements identified in the preceding tasks; and, (2) revise the monitoring program as necessary to assure compliance with these monitoring requirements.

Review of/revisions to the monitoring program shall address:

(1) Estimation of mass emissions of chlordane, DDT, PCBs and toxaphene.
(2) Determination of compliance with MS4 wasteload allocations for Upper and Lower Newport Bay, and of status of achievement with the informational wasteload allocations for San Diego Creek for chlordane and PCBs.
(3) Assessment of temporal and spatial trends in organochlorine compound concentrations in water, sediment and tissue samples.
(4) Semi-annual sediment monitoring in San Diego Creek and Newport Bay. Measurements of sediment chemistry in these waters should be evaluated with respect to evidence of biological effects, such as toxicity and benthic community degradation.
(5) Evaluation of organochlorine bioaccumulation and food web biomagnification
(6) Assessment of the degree to which natural attenuation is occurring in the watershed.

Accurately quantifying the very small mass loads that are allowable under these TMDLs will be very challenging; analytical strategies for quantifying loads of the organochlorine compounds must be carefully explored.

Revisions to the monitoring program shall take into consideration the following recommendations provided by members of the Organochlorine Compounds TMDL Technical Advisory Committee (TAC):

(1) The analytical parameters measured need to be established for each matrix of interest (e.g., sediment, tissue, ambient water). The representative list of compounds to be measured needs to be identified (e.g., what chlordane compounds will be measured and summed to represent "total chlordane;" will PCB congeners be measured and summed or will Aroclors?).
(2) Data quality will need to be consistent with the State's Surface Water Ambient Monitoring Program (SWAMP). Detection limits, accuracy and precision of analytical methods should be adequate to assure the goals of the monitoring efforts can be achieved.
(3) Bioaccumulation/biomagnification in high trophic level predators may not immediately respond to load reductions; appropriate time scales and schedules for monitoring that are supported by empirical data and/or modeling should be established.
(4) Sentinel fish and wildlife species should be selected for monitoring based on home range, life history, size and age.

MS4 permittees may address the requirements specified herein by participation in the Working Group and development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

Task 9: Conduct Special Studies

The following special studies should be conducted, in addition to the studies already underway in the watershed. This list is based, in part, on recommendations of the technical advisory committee for the organochlorine compounds TMDLs. These studies will be implemented as resources become available, and the results will be used to review and revise these TMDLs. Stakeholder contributions to these investigations are encouraged and would facilitate review of the TMDLs.

(1) Evaluation of sediment toxicity in San Diego Creek and tributaries, and Upper and Lower Newport Bay.

Previous studies have included Toxicity Identification Evaluations (TIEs) that have yielded inconclusive results as to the cause of toxicity in Newport Bay. Sediment toxicity within San Diego Creek is not well-documented or well-understood. There is evidence that pyrethroid compounds may be a significant contributor. In determining the extent to which nonpolar organic compounds are causing or contributing to sediment toxicity, the differential contribution of both the organochlorine compounds and pyrethroids should be determined to assure that control actions are properly identified and implemented. Monitoring should be performed year-round at multiple locations within San Diego Creek and Newport Bay (to encompass spatial and temporal variability), and should include various land use types in order to quantify the relative contributions from various sources.

(2) Refinement of sediment and tissue targets.

A study is being conducted by the San Francisco Estuary Institute to develop indicators and a framework for assessing the indirect effects of sediment contaminants. The objective is to provide methodology that will assist in evaluating indirect adverse biological effects for bioaccumulative pollutants (e.g. due to food web biomagnification), as part of the overall goal of developing statewide sediment quality objectives. Newport Bay is being used as a case study to show how the proposed methodology could be implemented on a screening level. Multiple lines of evidence will be evaluated to determine impacts of organochlorine pesticides and PCBs to humans and wildlife. A conceptual foodweb model will be developed, and sensitive wildlife receptors will be identified. Empirical field data and a steady-state food web model will be used to calculate bioaccumulation factors for the

organochlorine compounds. The bioaccumulation factors will be combined with effects thresholds to identify sediment concentrations that are protective of target wildlife and humans.

Once completed by SFEI, a thorough evaluation of the Newport Bay case study needs to be initiated, and any additional analyses required for a more in-depth risk analysis should be identified and completed. Protective sediment and tissue targets for indirect effects to humans and wildlife should be developed by the time the TMDLs are re-opened. Furthermore, once TIEs have identified the likely toxicant(s) responsible for sediment toxicity in San Diego Creek and Newport Bay (direct effects), field and laboratory studies should be conducted in order to determine bioavailability and the dose-response relationship between sediment concentrations and biologic effects.

(3) Evaluation of regional BMPs (e.g., constructed wetlands and sediment detention basins) for mitigating potential adverse water quality impacts of sediment-associated pollutants (e.g., OCs, pyrethroids).

Large-scale, centralized BMPs such as constructed wetlands and storm water retention basins may be more effective than project-level BMPs in reducing adverse environmental impacts of sediment-borne pollutants. Regional BMPs are either being planned or are in place within the watershed (e.g., IRWD NTS). Their potential effectiveness for capturing the organochlorine compounds and mitigating impacts needs to be evaluated.

(4) Improvement in linkage between toxaphene measured in fish tissue and toxaphene in bed sediments.

The toxaphene impairment listing for San Diego Creek is based on fish tissue exceedances that have no measured linkage with toxaphene in sediments. While sediment is the primary TMDL target for these TMDLs, toxaphene is usually not detected in sediment. Because of its chemical complexity, there is a large degree of analytical uncertainty with measurements of toxaphene in environmental samples that use standard methods (e.g., EPA Method 8081a), especially at low levels. Confirmations of toxaphene in fish and sediment samples in San Diego Creek (and possibly Newport Bay) using other techniques (e.g., GC-ECNI-MS or MS/MS) is recommended.

(5) Evaluation of relative importance of continuing OCs discharges to receiving waters through erosion and sedimentation processes, versus recirculation of existing contaminated bed sediments, in causing beneficial use impairment in San Diego Creek and Newport Bay.

This study should allow for determination of the most effective implementation strategies to reduce organochlorine compounds in the MS4 and other receiving waters.

Phase II Implementation

Task 10: TMDL Reopener

These TMDLs will be reopened no later than (*five (5) years following OAL approval of this BPA*) in order to evaluate the effectiveness of Phase I implementation. At that time, all new data will be evaluated and used to reassess impairment, BMP effectiveness, and whether modifications to the TMDLs are warranted. If BMPs implemented during Phase I have been shown to be ineffective in reducing levels of organochlorine compounds, then more stringent BMPs may be necessary during Phase II implementation.

Implementation of these TMDLs and the schedule for implementation are very closely tied with other TMDLs that are currently being implemented in the watershed. The sediment TMDL allowable load for San Diego Creek was the basis for calculating organochlorine compound loading capacities. The sediment TMDL is scheduled for revision in 2007; changes to the sediment TMDLs will likely necessitate changes to these organochlorine compounds TMDLs as well.

ATTACHMENT 2 TO RESOLUTION NO. R8-2011-0037

Revised Organochlorine Compounds TMDLs for San Diego Creek, Upper and Lower Newport Bay (Attachment 2 to Resolution No. R8-2007-0024)

(NOTE: The language identified below is proposed to be inserted into Chapter 5 of the Basin Plan. If the amendment is approved, corresponding changes will be made to the Table of Contents, the List of Tables, page numbers, and page headers in the plan. Due to the two-column page layout of the Basin Plan, the location of tables in relation to text may change during final formatting of the amendment. In order to accommodate other new TMDLs adopted as Basin Plan amendments and to maintain their order by watershed, the table and figure identifiers may be modified in future formatting of the Basin Plan for re-publication purposes. However, no substantive changes to the tables/figures would occur absent a Basin Plan Amendment.)

Chapter 5 - Implementation Plan, Discussion of Newport Bay Watershed (page 5-39 *et seq*), add the following to 4. Toxics Substances Contamination

4.b Organochlorine Compounds TMDLs

Organochlorine compounds, including DDT, PCBs, toxaphene and chlordane, possess unique physical and chemical properties that influence their persistence, fate and transport in the environment. While these characteristics vary among the organochlorine compounds, they all exhibit an ability to resist degradation, partition into sediment, and to accumulate in the tissue of organisms, including invertebrates, fish, birds and mammals. The bioaccumulation of these compounds can adversely affect the health and reproductive success of aquatic organisms and their predators, and can pose a health threat to human consumers.

A TMDL technical report prepared by Regional Board staff [Ref. # 1] describes organochlorine-related problems in Newport Bay and its watershed and delineates the technical basis for the TMDLs that follow.

The waterbody-pollutant combinations for which organochlorine compounds TMDLs were established by the Regional Board are listed in Table NB-OCs-1. These TMDLs differ from those established by USEPA in 2002 in several respects:

First, based on an updated impairment assessment that utilized new data and applied the State Water Board's "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List" (2004) [Ref. # 2], the Regional Board established TMDLs for a list of organochlorine compound-waterbody combinations different from that of USEPA. As shown in Table NB-OCs-2, USEPA also established TMDLs for dieldrin, chlordane, and PCBs in San Diego Creek and for dieldrin in Lower Newport Bay. In contrast, the Regional Board found no impairment as the result of dieldrin in any of these waters, nor was impairment due to chlordane or PCBs found in San Diego Creek and its tributaries.

As described in the TMDL technical report, Regional Board staff also found no impairment due to DDT in San Diego Creek or its tributaries. However, in adopting the 2006 Section 303(d) list (October 25, 2006, Resolution No. 2006-0079), the State Water Board found impairment due to DDT in Peter's Canyon Channel. In response, the Regional Board established a TMDL for DDT in San Diego Creek and its tributaries, including Peters Canyon Channel.

Second, corrections and modifications were made to loading capacities and existing loads identified in USEPA's TMDLs. Finally, an implementation plan is specified (see Section 4.b.3).

While the Regional Board did not establish TMDLs for chlordane and PCBs for San Diego Creek and tributaries, the Board did develop informational TMDLs for these substances in these waters, pursuant to Clean Water Act Section 303(d)(3). These informational TMDLs are shown in Table NB-OCs-3. This action was taken in light of several factors. First, the largest source of organochlorine compounds to Newport Bay is San Diego Creek. Second, the data suggest that the existing loading of chlordane to the Creek is greater than the loading capacity. This suggests that the lack of finding of impairment due to chlordane may be simply a reflection of a lack of data with which to assess impairment. Finally, these informational TMDLs may forward action to address organochlorine compound problems in the watershed. These informational TMDLs have no regulatory effect but may be used as the basis for further investigation of the relative contributions of the various sources of organochlorine compound inputs to San Diego Creek and thence the Bay. In the long-term, this would be expected to help assure proper apportionment of responsibility for implementation of the TMDLs identified in Table NB-OCs-1.

Table NB-OCs-1. Waterbody-pollutant combinations for which Organochlorine Compound TMDLs are established

Waterbody	***Pollutant***
San Diego Creek and tributaries	DDT, Toxaphene
Upper Newport Bay	Chlordane, DDT, PCBs
Lower Newport Bay	Chlordane, DDT, PCBs

Table NB-OCs-2. Waterbody-pollutant combinations for which Organochlorine Compounds TMDLs were established by USEPA (2002) and Regional Board (2007)

Waterbody	*TMDLs*	
	USEPA	**Regional Board**
San Diego Creek and tributaries*	Chlordane, dieldrin, DDT, PCBs, Toxaphene	DDT, Toxaphene
Upper Newport Bay	Chlordane, DDT, PCBs	Chlordane, DDT, PCBs
Lower Newport Bay	Chlordane, dieldrin, DDT, PCBs	Chlordane, DDT, PCBs

*TMDLs are established for San Diego Creek and tributaries, even if impairment was only found in particular reaches (e.g., SWRCB found DDT impairment in Peter's Canyon Channel, a primary tributary to San Diego Creek Reach 1, but the TMDL includes all of San Diego Creek and tributaries).

Table NB-OCs-3. Informational TMDLs

Waterbody	*Informational TMDLs*
San Diego Creek and tributaries	Chlordane, PCBs

4.b.1 Numeric Targets used in Organochlorine Compounds TMDLs

Numeric targets identify specific endpoints in sediment, water column or tissue that equate to attainment of water quality standards, which is the purpose of TMDLs. Multiple targets may be appropriate where a single indicator is insufficient to protect all beneficial uses and/or attain all applicable water quality objectives. The range of beneficial uses identified in this Basin Plan (see Chapter 3) for the waters addressed by the organochlorine compounds TMDLs makes clear that the targets must address the protection of aquatic organisms, wildlife (including federally listed threatened and endangered species) and human consumers of recreationally and commercially caught fish.

Sediment, water column and fish tissue targets are identified for these TMDLs, as shown in Table NB-OCs-4. The sediment and water column targets are identical to those selected by USEPA in the development of their organochlorine compounds TMDLs (2002). Fish tissue targets are added for the protection of aquatic life and wildlife.

The targets employed in the development of informational TMDLs for chlordane and PCBs in San Diego Creek and its tributaries are shown in Table NB-OCs-5.

Table NB-OCs-4. Numeric Sediment, Fish Tissue, and Water Column TMDL Targets

	Total DDT	Chlordane	Total PCBs	Toxaphene
Sediment Targets[1]; units are µg/kg dry weight				
San Diego Creek and tributaries	6.98			0.1
Upper & Lower Newport Bay	3.89	2.26	21.5	
Fish Tissue Targets for Protection of Human Health[2]; units are µg/kg wet weight				
San Diego Creek and tributaries	100			30
Upper & Lower Newport Bay	100	30	20	
Fish Tissue Targets for Protection of Aquatic Life and Wildlife[3]; units are µg/kg wet weight				
San Diego Creek and tributaries	1000			100
Upper & Lower Newport Bay	50	50	500	
Water Column Targets for Protection of Aquatic Life, Wildlife & Human Health[4] (µg/L)				
San Diego Creek and tributaries				
Acute Criterion (CMC[a])	1.1			0.73
Chronic Criterion (CCC[b])	0.001			0.0002
Human Health Criterion	0.00059			0.00075
Upper & Lower Newport Bay				
Acute Criterion (CMC[a])	0.13	0.09		
Chronic Criterion (CCC[b])	0.001	0.004	0.03	
Human Health Criterion	0.00059	0.00059	0.00017	

[1]Freshwater and marine sediment targets, except toxaphene, are Threshold Effect Levels (TELs) from Buchman, M.F. 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pp. Toxaphene target is from N.Y. Dept. of Environmental Conservation.

[2]Freshwater and marine fish tissue targets for protection of human health are Office of Environmental Health Hazard Assessment (OEHHA) Screening Values (SVs).

[3]Freshwater and marine fish tissue targets for protection of aquatic life and wildlife are from Water Quality Criteria 1972. A report of the Committee on Water Quality Criteria, Environmental Studies Board, National Academy of Sciences, National Academy of Engineering. Washington, D.C., 1972.

[4]Freshwater and marine targets are from California Toxics Rule (2000).

[a] CMC: Criteria Maximum Concentration
[b] CCC: Continuous Criteria Concentration

Table NB-OCs-5. Numeric Sediment, Fish Tissue, and Water Column Targets used in Informational TMDLs

	Chlordane	Total PCBs
Sediment Targets[1]; units are µg/kg dry weight		
San Diego Creek and tributaries	4.5	34.1
Fish Tissue Targets for Protection of Human Health[2]; units are µg/kg wet weight		
San Diego Creek and tributaries	30	20
Fish Tissue Targets for Protection of Aquatic Life and Wildlife[3]; units are µg/kg wet weight		
San Diego Creek and tributaries	100	500
Water Column Targets for Protection of Aquatic Life, Wildlife & Human Health[4] (µg/L)		
San Diego Creek and tributaries		
Acute Criterion (CMC[a])	2.4	
Chronic Criterion (CCC[b])	0.0043	0.014
Human Health Criterion	0.00059	0.00017

[1]Freshwater sediment targets are Threshold Effect Levels (TELs) from Buchman, M.F. 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pp.
[2]Freshwater fish tissue targets for protection of human health are Office of Environmental Health Hazard Assessment (OEHHA) Screening Values (SVs).

[3]Freshwater fish tissue targets for protection of aquatic life and wildlife are from Water Quality Criteria 1972. A report of the Committee on Water Quality Criteria, Environmental Studies Board, National Academy of Sciences, National Academy of Engineering. Washington, D.C., 1972.

[4]Freshwater targets are from California Toxics Rule (2000).

[a] CMC: Criteria Maximum Concentration
[b] CCC: Continuous Criteria Concentration

The linkage between adverse effects in sensitive wildlife species and concentrations of the organochlorine pollutants in sediments, prey organisms and water is not well understood at the present time, although work is underway to better understand ecological risk in Newport Bay. In addition, the State is in the process of developing sediment quality objectives that should provide guidance for assessing adverse effects due to pollutant bioaccumulation. Reducing contaminant loads in the sediment will result in progress toward reducing risk to aquatic life and wildlife. During implementation of these TMDLs, additional and/or modified wildlife or other targets will be identified as risk assessment information becomes available. These TMDLs will be revisited (see 4.b.3) and revised as appropriate.

4.b.2. Organochlorine Compounds TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

The organochlorine compounds TMDLs for San Diego Creek and its tributaries, Upper Newport Bay and Lower Newport Bay are shown in Tables NB-OCs-6 and NB-OCs-7. The TMDLs are expressed on a daily basis (average grams per day) in Table NB-OCs-6, and on an annual basis (grams per year) in Table NB-OCs-7. Expression of the TMDLs on a daily basis is intended to comply with a relevant court decision. However, because of the strong seasonality associated with the loading of organochlorine compounds during storm events, it is appropriate for implementation to occur based on average annual loadings. The TMDLs are to be achieved as soon as possible but no later than *(seven years from the date of OAL approval of this Basin Plan Amendment (BPA))*.

Table NB-OCs-6. TMDLs for San Diego Creek, Upper and Lower Newport Bay (expressed on a "daily" basis to be consistent with the D.C. Circuit Court of Appeals decision in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015 [D.C. Cir.2006])

Water Body	Pollutant	TMDL (average grams per day)[a]
San Diego Creek and Tributaries	Total DDT	1.08
	Toxaphene	0.02
Upper Newport Bay	Total DDT	0.44
	Chlordane	0.25
	Total PCBs	0.25
Lower Newport Bay	Total DDT	0.16
	Chlordane	0.09
	Total PCBs	0.66

[a] Compliance to be achieved as soon as possible but no later than (*seven years from the date of OAL approval of this BPA*).

Table NB-OCs-7. TMDLs for San Diego Creek, Upper and Lower Newport Bay (expressed on annual basis for implementation purposes)

Water Body	Pollutant	TMDL (grams per year)[a]
San Diego Creek and Tributaries	Total DDT	396
	Toxaphene	6
Upper Newport Bay	Total DDT	160
	Chlordane	93
	Total PCBs	92
Lower Newport Bay	Total DDT	59
	Chlordane	34
	Total PCBs	241

[a] Compliance to be achieved as soon as possible but no later than (*seven years from the date of OAL approval of this BPA*).

Informational TMDLs for San Diego Creek and its tributaries for chlordane and total PCBs are shown in Table NB-OCs-8. Again, these informational TMDLs are expressed on average daily and annual bases.

Table NB-OCs-8. Informational TMDLs for San Diego Creek and Tributaries (expressed on average daily and annual bases)

Water Body	Pollutant	TMDL (average grams per day)
San Diego Creek and Tributaries	Chlordane	0.70
	Total PCBs	0.34
		TMDL (grams per year)
San Diego Creek and Tributaries	Chlordane	255
	Total PCBs	125

Wasteload and load allocations to achieve the TMDLs specified in Tables NB-OCs-6 and NB-OCs-7 are shown in Tables NB-OCs-9 and NB-OCs-10, respectively. Like the TMDLs, the allocations are expressed in terms of both average daily and annual loads. An explicit margin of safety (MOS) of ten percent was applied in calculating the allocations. Consistent with the TMDL compliance schedule, these allocations are to be achieved as soon as possible but no later than *(seven years from the date of OAL approval of this BPA*).

Wasteload and load allocations necessary to meet the informational TMDLs shown in Table NB-OCs-8 are identified in Tables NB-OCs-11 (expressed as average daily loads) and NB-OCs-12 (expressed as annual loads). These allocations are identified only for informational purposes.

4.b.3. Implementation of Organochlorine Compounds TMDLs

These TMDLs are to be implemented within an adaptive management framework, with compliance monitoring, special studies, and stakeholder interaction guiding the process over time. Information obtained from compliance monitoring will measure progress towards achievement of WLAs and LAs, potentially leading to changes to TMDL allocations; ongoing investigations and recommended special studies, if implemented, may provide information that leads to revisions of the TMDLs, adjustments to the implementation schedule, and/or improved implementation strategies. Thus, implementation of the TMDLs is expected to be an ongoing and dynamic process.

The implementation plan identified in this section reflects the adaptive management, phased approach to the organochlorine compound TMDLs adopted by the Regional Board. The Board found a phased approach, with compliance schedules, appropriate in light of the following considerations. First, it was recognized that additional monitoring and special studies were either already underway or would be needed to address data limitations and significant uncertainty associated with the TMDL calculations, and that changes to the TMDLs might be appropriate based on the results of those investigations. Second, it was also understood that these data limitations and uncertainties pertained to the impairment assessment itself and the determination of the specific organochlorine compounds for which TMDLs are required. Third, the natural attenuation of these compounds over time is expected to affect significantly the selection, development and implementation of BMPs. As described in the TMDL technical report [Ref.1], use of the organochlorine compounds addressed by these TMDLs has been banned for many years and trend analyses indicate declining concentrations of these substances in fish tissue over time. Natural attenuation should eventually reduce organochlorine pollutant levels to concentrations that pose no threat to beneficial uses in San Diego Creek or Newport Bay. While natural degradation of these compounds is likely the principal cause of the observed decline in fish tissue concentrations, the implementation of erosion and sediment controls and other Best Management Practices to address compliance with the sediment and nutrient TMDLs for Newport Bay and its watershed (see

Table NB-OCs-9. TMDLs and Allocations for San Diego Creek, Upper and Lower Newport Bay (expressed on a "daily" basis to be consistent with the recent D.C. Circuit Court of Appeals decision in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015 [D.C. Cir.2006]).[a,b]

	Type	Total DDT	Chlordane	Total PCBs	Toxaphene
		(average grams/day)			
San Diego Creek					
WLA	Urban Runoff – County MS4 (36%)	0.35			0.005
	Construction (28%)	0.27			0.004
	Commercial Nurseries (4%)	0.04			0.001
	Caltrans MS4 (11%)	0.11			0.002
	Subtotal – WLA (79%)	**0.77**			**0.01**
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.05			0.001
	Open Space (9%)	0.09			0.001
	Streams &Channels (2%)	0.02			0.0003
	Undefined (5%)	0.05			0.001
	Subtotal – LA (21%)	**0.21**			**0.003**
MOS (10% of total TMDL)		**0.11**			**0.002**
Total TMDL		**1.08**			**0.02**
Upper Newport Bay					
WLA	Urban Runoff - County MS4 (36%)	0.14	0.08	0.08	
	Construction (28%)	0.11	0.06	0.06	
	Commercial Nurseries (4%)	0.02	0.01	0.01	
	Caltrans MS4 (11%)	0.04	0.03	0.02	
	Subtotal – WLA (79%)	**0.31**	**0.18**	**0.18**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.02	0.01	0.01	
	Open Space (9%)	0.04	0.02	0.02	
	Streams & Channels (2%)	0.01	0.005	0.005	
	Undefined (5%)	0.02	0.01	0.01	
	Subtotal – LA (21%)	**0.08**	**0.05**	**0.05**	
MOS (10% of Total TMDL)		**0.04**	**0.03**	**0.03**	
Total TMDL		**0.44**	**0.25**	**0.25**	
Lower Newport Bay					
WLA	Urban Runoff – County MS4 (36%)	0.05	0.03	0.21	
	Construction (28%)	0.04	0.02	0.17	
	Commercial Nurseries (4%)	0.01	0.003	0.02	
	Caltrans MS4 (11%)	0.02	0.01	0.07	
	Subtotal – WLA (79%)	**0.11**	**0.07**	**0.47**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.01	0.004	0.03	
	Open Space (9%)	0.01	0.01	0.05	
	Streams & Channels (2%)	0.003	0.002	0.01	
	Undefined (5%)	0.01	0.004	0.03	
	Subtotal – LA (21%)	**0.03**	**0.02**	**0.12**	
MOS (10% of Total TMDL)		**0.02**	**0.01**	**0.07**	
Total TMDL		**0.16**	**0.09**	**0.66**	

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the Total TMDL. Percent WLA and Percent LA add to 100%.

[b] Compliance to be achieved as soon as possible but no later than *(seven years from the date of OAL approval of this BPA).*

Table NB-OCs-10. TMDLs and Allocations for San Diego Creek, Upper and Lower Newport Bay (expressed on an "annual" basis for implementation purposes). [a, b]

		Total DDT	Chlordane	Total PCBs	Toxaphene
	Type	(grams per year)			
San Diego Creek					
WLA	Urban Runoff – County MS4 (36%)	128.3			1.9
	Construction (28%)	99.8			1.5
	Commercial Nurseries (4%)	14.3			0.2
	Caltrans MS4 (11%)	39.2			0.6
	Subtotal – WLA (79%)	**281.6**			**4.3**
LA	Agriculture (5%) (excludes nurseries under WDRs)	17.8			0.3
	Open Space (9%)	32.1			0.5
	Streams & Channels (2%)	7.1			0.1
	Undefined (5%)	17.8			0.3
	Subtotal – LA (21%)	**74.8**			**1.1**
MOS (10% of Total TMDL)		**40**			**0.6**
Total TMDL		**396**			**6**
Upper Newport Bay					
WLA	Urban Runoff – County MS4 (36%)	51.8	30.1	29.8	
	Construction (28%)	40.3	23.4	23.2	
	Commercial Nurseries (4%)	5.8	3.3	3.3	
	Caltrans MS4 (11%)	15.8	9.2	9.1	
	Subtotal – WLA (79%)	**113.8**	**66.1**	**65.4**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	7.2	8	7	
	Open Space (9%)	13.0	7.6	7.5	
	Streams & Channels (2%)	2.9	1.7	1.7	
	Undefined (5%)	7.2	4.2	4.2	
	Subtotal – LA (21%)	**30.2**	**21.4**	**20.3**	
MOS (10% of Total TMDL)		**16**	**9**	**9**	
Total TMDL		**160**	**93**	**92**	
Lower Newport Bay					
WLA	Urban Runoff – County MS4 (36%)	19.1	11.0	78.1	
	Construction (28%)	14.9	8.6	60.7	
	Commercial Nurseries (4%)	2.1	1.2	8.7	
	Caltrans MS4 (11%)	5.8	3.4	23.9	
	Subtotal – WLA (79%)	**41.9**	**24.2**	**171.4**	
LA	Agriculture (5%) (excludes nurseries under WDRs)	2.7	1.5	10.8	
	Open Space (9%)	4.8	2.8	19.5	
	Streams & Channels (2%)	1.1	0.6	4.3	
	Undefined (5%)	2.7	1.5	10.8	
	Subtotal – LA (21%)	**11.2**	**6.4**	**45.5**	
MOS (10% of Total TMDL)		**5.9**	**3.4**	**24**	
Total TMDL		**59**	**34**	**241**	

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the total TMDL. Percent WLA and Percent LA add to 100%.

[b] Compliance to be achieved as soon as possible but no later than *(seven years from the date of OAL approval of this BPA).*

Table NB-OCs-11. Informational TMDLs and Allocations for San Diego Creek (expressed on a "daily" basis) [a]

Category	Type	Chlordane	Total PCBs
		(average grams per day)	
San Diego Creek			
WLA	Urban Runoff – County MS4 (36%)	0.23	0.11
	Construction (28%)	0.18	0.09
	Commercial Nurseries (4%)	0.03	0.01
	Caltrans MS4 (11%)	0.07	0.03
	Subtotal – WLA (79%)	**0.50**	**0.24**
LA	Agriculture (5%) (excludes nurseries under WDRs)	0.03	0.02
	Open Space (9%)	0.06	0.03
	Streams &Channels (2%)	0.01	0.01
	Undefined (5%)	0.03	0.02
	Subtotal – LA (21%)	**0.13**	**0.08**
MOS (10% of total TMDL)		**0.07**	**0.03**
Total TMDL		**0.70**	**0.34**

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the Total TMDL. Percent WLA and Percent LA add to 100%.

Table NB-OCs-12. Informational TMDLs and Allocations for San Diego Creek (expressed on an "annual" basis) [a]

Category	Type	Chlordane	Total PCBs
		(grams per year)	
San Diego Creek			
WLA	Urban Runoff – County MS4 (36%)	82.6	40.5
	Construction (28%)	64.3	31.5
	Commercial Nurseries (4%)	9.2	4.5
	Caltrans MS4 (11%)	25.2	12.4
	Subtotal – WLA (79%)	**181.3**	**88.9**
LA	Agriculture (5%) (excludes nurseries under WDRs)	11.5	5.6
	Open Space (9%)	20.7	10.1
	Streams &Channels (2%)	4.6	2.3
	Undefined (5%)	11.5	5.6
	Subtotal – LA (21%)	**48.2**	**23.6**
MOS (10% of total TMDL)		**26**	**13**
Total TMDL		**255**	**125**

[a] Percentages for WLA (79%) and LA (21%) are applied to the TMDL, after subtracting the 10% MOS from the total TMDL. Percent WLA and Percent LA add to 100%.

discussions of these TMDLs elsewhere in this Basin Plan) is a probable factor. In any case, the observed trends suggest that as monitoring continues in the watershed and pollutant levels decline, some or all of the organochlorine compounds may warrant delisting from the Clean Water Act Section 303(d) list of impaired waters. Again, these TMDLs would need to be revisited accordingly.

This implementation plan also reflects recommendations by regulated stakeholders in the Newport Bay watershed to convene a Working Group to develop and implement a comprehensive Work Plan to: address, as an early action item, the technical uncertainties in these TMDLs and make recommendations for revisions, as appropriate; identify and prioritize tasks necessary to implement the TMDLs; integrate TMDL implementation tasks with those already being conducted in response to other programs (e.g., permits, other TMDLs); and, investigate other pollutants of concern in the watershed.

Table NB-OCs-13 lists the tasks and schedules needed to implement the organochlorine TMDLs. This implementation plan is aimed at identifying actions to accelerate the decline in organochlorine compound concentrations in the watershed, and to augment their natural attenuation. The implementation plan is focused to a large extent on the monitoring and, where necessary, enhanced implementation of Best Management Practices (BMPs) to reduce the erosion and transport to surface waters of fine sediment to which the organochlorine compounds tend to adhere. Many of these BMPs are already in place as the result of existing permits issued by the Regional Board or State Water Resources Control Board for stormwater and construction activities, and/or in response to established TMDLs. The intent is to

assure that source control activities are implemented to reduce any active sources of the organochlorine compounds, and in other areas where such actions will be most effective in meeting the TMDL goals. Monitoring and special study requirements are included to provide for TMDL compliance assessment and refinement.

In response to the recommendation by watershed stakeholders, this implementation plan provides an opportunity for dischargers to participate in the development and implementation of a comprehensive Work Plan. The implementation tasks identified in Table NB-OCs-13 (except Tasks 1 and 4; see discussion of Task 7, below) will be considered in the development of the Work Plan and incorporated, as appropriate. Implementation of the Work Plan, which will be approved by the Regional Board at a public hearing, will obviate the need for individual actions on the tasks in Table NB-OCs-13 by members of the Working Group. Completion of the Work Plan will result, in part, in recommendations for revisions to these TMDLs based on review by an Independent Advisory Panel and the results of ongoing or requisite monitoring and investigations, and in the development of a comprehensive plan for BMPs and other actions needed to assure compliance with the TMDLs, wasteload allocations and load allocations as soon as possible after completion of execution of the Work Plan but no later than *(seven years from the date of OAL approval of this BPA)*[1]. Dischargers who elect not to participate in the Work Plan approach will be required to implement the tasks shown in Table NB-OCs-13, as appropriate.

Each of the tasks identified in Table NB-OCs-13 is described below.

[1] This compliance schedule and/or the organochlorine compounds TMDLs may be modified, through the Basin Planning process, in response to information provided by implementation of the Work Plan tasks and/or other investigations.

Table NB-OCs-13. Organochlorine Compounds TMDLs Implementation Tasks and Schedule

Task	Description	Compliance Date – As Soon As Possible But No Later Than [b,c]
PHASE I IMPLEMENTATION		
1	Revise existing WDRs and NPDES permits: *Commercial Nursery WDRs, MS4 Permit, Other NPDES Permits*	Upon OAL approval of BPA and permit renewal
2[a]	a. Develop proposed agricultural BMP and monitoring program to assess and control OCs discharges. b. Implement program	a. (*3 months after OAL approval of BPA*) b. Upon Regional Board approval
3[a]	a. Identify responsible parties for open space areas b. Develop proposed monitoring program to assess OCs inputs from open space areas c. Implement proposed monitoring program d. Develop plan to implement effective erosion and sediment control BMPs for management of fine particulates (if found necessary based on monitoring results) e. Implement BMP plan	a.(*1 month after OAL approval of BPA*) b. 2 months after notification of responsible parties c. Upon Regional Board approval d. Within 6 months of notification of need to develop plan e. Upon Regional Board approval
4[a]	Implement effective sediment and erosion control BMPs for management of fine particulates on construction sites: Regional Board: a. Develop SWPPP Improvement Program MS4 permittees: b. Revise planning processes as necessary to assure proper communication of SWPPP requirements c. Evaluate/implement BMPs effective in reducing/eliminating organochlorine discharges: i. Submit proposed plan and schedule for BMP studies and implement plan ii. Submit studies report; including plan and schedule to implement BMPs/include in Guidance Manual iii. Implement BMPs/include in Guidance Manual	a. (*Upon OAL approval of BPA*) b. Within 3 months of appropriate revision of the MS4 permit c. i. Submit plan within 3 months of 13267 letter issuance/MS4 permit revision and implement upon Executive Officer approval; ii. Within 6 months of completion of studies plan; iii. Upon Executive Officer approval
5[a]	Evaluate sources of OCs; develop and implement BMPs accordingly: a. Submit proposed plan and schedule for source	a. Submit plan within 3 months of 13267 letter issuance/appropriate revision of the MS4 permit

	area investigations b. Implement investigation plan c. Submit report of investigation findings and plan/schedule for implementation of BMPs d. Implement BMP plan	b. Upon Executive Officer approval c. Within 6 months of completion of investigation plan d. Upon Executive Officer approval
6[a]	Evaluate feasibility and mechanisms to fund future dredging operations within San Diego Creek, Upper and Lower Newport Bay	Submit feasibility/funding report within *(3 years after OAL approval of BPA)*
7	Develop comprehensive Work Plan to meet TMDL implementation requirements, consistent with an adaptive management approach a. Convene Working Group b. Submit proposed Work Plan c. Implement Work Plan d. Complete execution of Work Plan	a. (*one month of OAL approval of BPA*) b. (*3 months after OAL approval of BPA)* c. Upon Regional Board approval d. Within 5 years of Work Plan approval
8[a]	Revise regional monitoring program	(*3 months after OAL approval of BPA)*; Annual Reports due November 15
9	Conduct special studies	As funding allows, and in order of priority identified in comprehensive Work Plan (Task 7), if applicable
PHASE II IMPLEMENTATION		
10	Review TMDLs, including numeric targets, WLAs and LAs; delist or revise TMDLs pursuant to established Sediment Quality Objectives, new data, and results of special studies	No later than (*5 years from OAL approval of BPA*)

a. The tasks and schedules identified in the Regional Board approved Work Plan developed by the Working Group shall govern implementation activities by members of the Working Group.
b. Final compliance with the TMDLs to be achieved no later than *(seven years from the date of OAL approval of this BPA)*.
c. The Regional Board may, after a public hearing, and without need for a Basin Plan amendment, revise the schedules in this table, except for the final compliance date of (*seven years from the date of OAL approval of this BPA*), if it determines good cause exists for such revisions.

Table NB-OCs-14. Existing NPDES Permits and WDRs Regulating Discharges in the Newport Bay Watershed

No.	Permit Title	Order No.	NPDES No.
1	Waste Discharge Requirements for the United States Department of the Navy, Former Marine Corps Air Station Tustin, Discharge to Peters Canyon Wash in the San Diego Creek/Newport Bay Watershed	R8-2006-0017	CA8000404
2	Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region - Areawide Urban Storm Water Runoff - Orange County (MS4 permit)	R8-2002-0010	CAS618030
3	National Pollutant Discharge Elimination System (NPDES) Permit Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)	99-06-DWQ	CAS000003
4	General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (de minimus) Threat to Water Quality	R8-2003-0061 as amended by R8-2005-0041 and R8-2006-0004	CAG998001
5	General Waste Discharge Requirements for Short-term Groundwater-Related Dischargers and De Minimus Wastewater Discharges to Surface Waters Within the San Diego Creek/Newport Bay Watershed	R8-2004-0021	CAG998002
6	General Groundwater Cleanup Permit for Discharges to Surface Waters of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Petroleum Hydrocarbons, Solvents and/or Petroleum Hydrocarbons mixed with Lead and/or Solvents	R8-2002-0007, as amended by R8-2003-0085 and R8-2005-0110	CAG918001
7	Waste Discharge Requirements for City of Tustin's 17th Street Desalter	R8-2002-0005	CA8000305
8	Waste Discharge Requirements for City of Irvine, Groundwater Dewatering Facilities, Irvine, Orange County,	R8-2005-0079	CA8000406
9	Waste Discharge Requirements for Bordiers Nursery, Inc.	R8-2003-0028	
10	Waste Discharge Requirements Hines Nurseries, Inc.	R8-2004-0060	
11	Waste Discharge Requirements for El Modeno Gardens, Inc., Orange County	R8-2005-0009	
12	Waste Discharge Requirements for Nakase Bros. Wholesale Nursery, Orange County	R8-2005-0006	

Phase I Implementation

Task 1: WDRs and NPDES Permits

The Regional Board shall review and revise, as necessary, existing NPDES permits and/or WDRs to incorporate the appropriate TMDL WLAs, compliance schedules, and monitoring program requirements. These permits are identified in Table NB-OCs-14. The appropriate TMDL WLAs, compliance schedules and monitoring program requirements shall be included in new NPDES permits/WDRs. The NPDES permits/WDRs shall specify TMDL-related provisions that apply provided that: (1) the dischargers are and remain members of the Working Group (see Task 7); and (2) the approved Work Plan developed by the Working Group is implemented in a timely and effective manner. The NPDES permit/WDRs shall also include TMDL-related provisions that apply if the discharger(s) do not participate or discontinue participation in the Working Group and/or if the approved Work Plan is not implemented effectively or in a timely manner.

Compliance with the TMDLs and wasteload allocations is to be achieved as soon as possible, but no later than (*seven years from the date of OAL approval of this BPA*). The way that this deadline applies to a particular discharger differs depending on whether the discharger is participating in the Working Group:

1. Working Group Participants. Provisions in NPDES permits/WDRs issued during implementation of the Work Plan will specify the following for Working Group members:

(a) Interim effluent limitations. Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plan will constitute interim, performance-based effluent limitations to implement the wasteload allocations. Adhering to these interim effluent limitations satisfies the requirement, during the Work Plan implementation period, to achieve compliance with the TMDLs and wasteload allocations "as soon as possible."

(b) Final effluent limitations. Final effluent limitations based on the wasteload allocations will also be specified, with a schedule requiring compliance as soon as possible but no later than *(seven years from the date of OAL approval of this BPA)*.[2] Compliance with the interim, performance-based limitations will fulfill the "as soon as possible" requirement. The NPDES permits/WDRs will specify further that the status of compliance with the final effluent limitations based on the wasteload allocations will be reviewed on an annual basis. Compliance with these limitations will be required prior to the completion of the Work Plan tasks, in accordance with a schedule approved by the Regional Board's Executive Officer, if it is demonstrated to the satisfaction of the Executive Officer that such earlier compliance is reasonably feasible.

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[2] It is recognized that this schedule may exceed the five year terms of NPDES permits. This schedule will be reflected in subsequent renewals of these NPDES permits.

Following the completion of the Work Plan tasks, NPDES permits/WDRs will require dischargers to comply with wasteload allocations in the shortest practicable time, but in no event later than *(seven years from the date of OAL approval of this BPA).*

2. Non-Working Group Dischargers. For dischargers not participating in the Working Group, NPDES permit/WDR provisions will require compliance with the wasteload allocations as soon as possible after adoption of NPDES permits/WDRs that implement the TMDLs, but no later than (*seven years from the date of OAL approval of this BPA).* In this case, the determination of what constitutes "as soon as possible" will be at the discretion of the Regional Board's Executive Officer.

Completion of the Work Plan and/or other investigations conducted by the Regional Board or others may result in modification of the TMDLs, wasteload allocations and the compliance schedule through the Basin Planning process. Subsequent issuance/revision of NPDES permit/WDRs will implement any such changes.

Ultimate compliance with permit limitations based on wasteload allocations is expected to be based upon iterative implementation of effective BMPs to manage the discharge of fine sediments containing organochlorine compounds, along with monitoring to measure BMP effectiveness.

Permit revisions shall be accomplished as soon as possible upon approval of these TMDLs. Given Regional Board resource constraints and the need to consider other program priorities, permit revisions are likely to be tied to renewal schedules.

For commercial nurseries covered under existing WDRs, revisions of these WDRs shall address the following identified needs:

(1) Evaluation of sites to determine/verify potential storm water and nonstorm water discharge locations;
(2) Evaluation of current monitoring programs and methods of sampling and analysis for consistency with other monitoring efforts in the watershed;
(3) In cooperation with U .C. Cooperative Extension, evaluation of BMPs for adequacy and implementation of the most effective BMPs to reduce/eliminate the discharge of potentially-contaminated fine sediments in both storm water and non-storm water discharges;
(4) Monitoring to better quantify nursery runoff as a potential source of organochlorine compounds and to assure that load reductions are achieved; and
(5) Based on the results of the preceding tasks, development of a workplan to be submitted within one month of the effective date of these TMDLs that identifies: (a) the BMPs implemented to date and their effectiveness in reducing fine sediment and organochlorine compound discharges; (b) the adequacy and consistency of monitoring efforts, and proposed improvements; (c) a plan and schedule for implementation of revised

BMPs and monitoring protocols, where appropriate. It is recognized that most nursery operations are likely to be of very limited duration due to the expiration of land leases. The workplan shall identify recommendations for BMP and monitoring improvements that are effective, reasonable and practicable, taking this consideration into account. This workplan shall be implemented upon approval by the Regional Board Executive Officer.

Revisions to the Municipal Separate Storm Sewer System (MS4) permit (R8-2002-0010, NPDES No. CAS618030), including the monitoring program shall address the monitoring and BMP-related tasks identified below, as appropriate. The Regional Board will coordinate also with the State Water Resources Control Board regarding revision of the Caltrans permit to address these monitoring and BMP-related tasks. These include: oversight and implementation of construction BMPs (Task 4); organochlorine compound source evaluations (Task 5); assessment of dredging feasibility and identification of a funding mechanism (Task 6); and, revision of the regional monitoring program (Task 8).

NPDES permits that regulate discharges of ground water to San Diego Creek or its tributaries shall be reviewed and revised as necessary to require annual (at a minimum) monitoring, using the most sensitive analytical techniques practicable, to analyze for organochlorine compounds in the discharges. If organochlorine compounds are found to be present, the dischargers shall be required to evaluate whether and to what extent the discharges would cause or contribute to an exceedance of wasteload allocations and to implement appropriate measures to reduce or eliminate organochlorine compounds in the discharges. New NPDES permits issued for these types of discharges shall incorporate the same requirements.

These dischargers (nurseries, MS4 permittees, Caltrans, ground water dischargers) may address the specific requirements identified above through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

Task 2: Develop and Implement an Agricultural BMP and Monitoring Program

Apart from certain nurseries, agricultural operations in the watershed are not currently regulated pursuant to waste discharge requirements. The SWRCB's "Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program" (Nonpoint Source Policy) (2004) requires that all nonpoint source dischargers be regulated under WDRs, waivers of WDRs, Basin Plan prohibitions, or some combination of these three administrative tools. Board staff is developing recommendations for an appropriate regulatory approach to address agricultural discharges. It is expected that the Regional Board will be asked to consider these recommendations and to approve a regulatory approach in late 2007. Appropriate load allocations to implement these TMDLs will be included in WDRs or a waiver of

WDRs, if and when issued by the Regional Board to address discharges from agricultural operations.

In the interim, agricultural operators shall identify and implement a monitoring program to assess OCs discharges from their facilities, and identify and implement a BMP program designed to reduce or eliminate those discharges. The proposed monitoring and BMP program shall be submitted as soon as possible but no later than (*3 months from OAL approval of this Basin Plan Amendment (BPA)*). These monitoring and BMP programs will be components of the waste discharge requirements or conditional waiver of waste discharge requirements that Board staff will recommend to implement the Nonpoint Source Policy. Load allocations identified in these TMDLs will also be specified in the WDRs/waiver, with a schedule of compliance.

It is recognized that most agricultural operations are expected to be of very limited duration due to the expiration of land leases. The monitoring and BMP programs proposed by the agricultural operators should include recommendations that are effective, reasonable and practicable, taking this consideration into account. The BMP and monitoring programs shall be implemented upon approval by the Regional Board. The BMP and monitoring programs may be implemented individually or by a group or groups of agricultural operators.

In addition, responsible parties may address these BMP/monitoring program requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7). WDRs or conditional waivers of WDRs issued to agricultural operators pursuant to the Nonpoint Source Policy shall specify that for those operators who participate in the development and implementation of a Regional Board approved Work Plan, compliance with the TMDLs and load allocations is to be achieved as soon as possible, but no later than *(seven years from the date of OAL approval of this BPA)*. The way that this deadline applies to a particular agricultural operator differs depending on whether the operator is participating in the Working Group:

1. Working Group Participants. Provisions in WDRs or conditional waivers of WDRs issued during implementation of the Work Plan will specify the following for Working Group members:

(a) Interim limitations: Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plan will constitute interim, performance-based limitations to implement the load allocations. Adherence to these interim limitations satisfies the requirement, during the Work Plan implementation period, to achieve compliance with the TMDLs and load allocations "as soon as possible."

(b) Final limitations: Final limitations based on the load allocations will also be specified in the WDRs/waivers, with a schedule requiring compliance as soon as

possible but no later than (*seven years from the date of OAL approval of this BPA*). Compliance with the interim, performance-based limitations will fulfill the "as soon as possible" requirement. The WDRs/waivers will specify further that the status of compliance with the final limitations based on the load allocations will be reviewed on an annual basis. Compliance with these limitations will be required prior to the completion of the Work Plan tasks, in accordance with a schedule approved by the Regional Board's Executive Officer, if it is demonstrated to the satisfaction of the Executive Officer that such earlier compliance is reasonably feasible.

Following the completion of the Work Plan tasks, WDRs/waivers will require agricultural operators to comply with load allocations in the shortest practicable time, but in no event later than *(seven years from the date of OAL approval of this BPA*).

2. Non-Working Group Dischargers. For agricultural operators not participating in the Working Group, provisions in WDR/waivers of WDRs will require compliance with the load allocations as soon as possible after adoption of WDRs/waivers of WDRs that implement the TMDLs, but no later than *(seven years from the date of OAL approval of this BPA)*. In this case, the determination of what constitutes "as soon as possible" will be at the discretion of the Regional Board's Executive Officer.

Completion of the Work Plan and/or other investigations conducted by the Regional Board or others may result in modification of the TMDLs, load allocations and the compliance schedule through the Basin Planning process. Subsequent issuance/revision of WDRs/conditional waivers of WDRs will implement any such changes.

Task 3: Identify Parties Responsible for Open Space Areas; Develop and Implement an OCs Monitoring Program to Assess Open Space Discharges; Develop and Implement an OCs BMP Program, if Necessary

Nonpoint source discharges from open space are also subject to State regulation. During Phase I of these TMDLs, sufficient data shall be collected by the responsible parties to determine whether discharges of OCs from designated open space, as well as discharges resulting from erosion in and adjacent to unmodified streams, are causing or contributing to exceedances of water quality objectives and/or impairment of beneficial uses of San Diego Creek and Newport Bay. With the assistance of the stakeholders, Regional Board staff will identify the responsible parties as soon as possible but no later than (*one month from OAL approval of this BPA*). Board staff will notify the identified responsible parties of their obligation to propose an organochlorine compound monitoring program within two months of notification. The monitoring program shall be implemented upon Regional Board approval.

Based on the results of this monitoring program, the responsible parties shall develop a BMP implementation plan within 6 months of notification by the Regional

Board's Executive Officer of the need to do so. The responsible parties shall implement that plan upon Regional Board approval.

The responsible parties may address these monitoring and BMP implementation program requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

The Regional Board will consider whether WDRs or a WDR waiver is necessary and appropriate for responsible parties not currently regulated, based on the monitoring results. WDRs or a WDR waiver, if issued, will include appropriate load allocations to implement these TMDLs. For responsible parties compliance with the TMDLs and load allocations is to be achieved as soon as possible, but no later than *(seven years from the date of OAL approval of this BPA)*. The way that this deadline applies to a particular responsible party differs depending on whether that responsible party is participating in the Working Group:

1. Working Group Participants. Provisions in WDRs or conditional waivers of WDRs issued during implementation of the Work Plan will specify the following for Working Group members:

(a) Interim limitations: Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plan will constitute interim, performance-based limitations to implement the load allocations. Adherence to the interim, performance-based limitations satisfies the requirement, during the Work Plan implementation period, to achieve compliance with the TMDLs and load allocations "as soon as possible."

(b) Final limitations: Final limitations based on the load allocations will also be specified in the WDRs/waivers, with a schedule requiring compliance as soon as possible but no later than (*seven years from the date of OAL approval of this BPA)*. Compliance with the interim, performance-based limitations will fulfill the "as soon as possible" requirement. The WDRs/waivers will specify further that the status of compliance with the final limitations based on the load allocations will be reviewed on an annual basis. Compliance with the final limitations will be required prior to the completion of the Work Plan tasks, in accordance with a schedule approved by the Regional Board's Executive Officer, if it is demonstrated to the satisfaction of the Executive Officer that such earlier compliance is reasonably feasible.

Following the completion of the Work Plan tasks, WDRs/waivers will require responsible parties to comply with load allocations in the shortest practicable time, but in no event later than *(seven years from the date of OAL approval of this BPA)*.

2. Non-Working Group Dischargers. For responsible parties not participating in the Working Group, compliance with the load allocations will be as soon as possible after TMDLs adoption and approval, but no later than *(seven years from the date of*

OAL approval of this BPA). In this case, the determination of what constitutes "as soon as possible" will be at the discretion of the Regional Board's Executive Officer.

Completion of the Work Plan and/or other investigations conducted by the Regional Board or others may result in modification of the TMDLs, load allocations and the compliance schedule through the Basin Planning process. Subsequent issuance/revision of WDRs/conditional waivers of WDRs will implement any such changes.

Task 4: Develop and Implement Appropriate BMPs for Construction Activities

Currently, all construction activities in the watershed are regulated under the State Water Resource Control Board's (SWRCB) General Permit for Discharge of Storm Water Runoff Associated with Construction Activity (Order No. 99-08-DWQ, NPDES No. CAS000002; the "General Construction Permit"), SWRCB National Pollutant Discharge Elimination System (NPDES) Permit Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans) (Order No. 99-06-DWQ, NPDES No. CAS000003; the Caltrans MS4 permit), and/or the Orange County MS4 NPDES permit. The requirements of these permits and an iterative, adaptive-management BMP approach, coupled with monitoring, are the foundation for meeting the TMDL WLAs for construction. The General Construction Permit, and the Orange County and Caltrans MS4 permits are expected to be revised over time. The specific tasks identified below may be addressed by revisions to one or more of these permits. In that case, the Regional Board will integrate requirements for implementation of this Task with the requirements of the Orange County and Caltrans MS4/General Construction permits so as to prevent conflict and/or duplication of effort.

To assure that effective construction BMPs are identified and implemented, program improvements are needed in the following areas: (a) Storm Water Pollution Prevention Plans (SWPPPs) prepared in response to the General Construction Permit must include supporting documentation and assumptions for selection of sediment and erosion control BMPs, and must state why the selected BMPs will meet the Construction WLAs for the organochlorine compounds; (b) SWPPP provisions must be rigorously implemented on construction sites; (c) sampling and analysis for the organochlorine pesticides and PCBs in storm and nonstorm discharges containing sediment from construction sites is necessary to determine the efficacy of BMPs, as well as compliance with the construction WLAs; sampling and analysis plans must be included in SWPPPs; (d) additional BMPs, including enhanced BMPs, must be evaluated to determine those that may be appropriate for reducing or eliminating organochlorine compound discharges from construction sites (e.g., BMPs effective in control of fine particulates) without significant adverse environmental effects (e.g., toxicity that might result from improper storage and/or application of polymers); (e) outreach is necessary to assure the effective implementation of these SWPPP requirements; and (e) enforcement of the SWPPP requirements is necessary.

To address these program improvements, Regional Board staff shall develop a SWPPP Improvement Program that identifies the Regional Board's expectations with respect to the content of SWPPPs, including documentation regarding the selection and implementation of BMPs, and a sampling and analysis plan. The Improvement Program shall include specific guidance regarding the development and implementation of monitoring plans, including the constituents to be monitored, sampling frequency and analytical protocols. The SWPPP Improvement Program shall be completed by (*the date of OAL approval of this BPA*). No later than two months from completion of the Improvement Program, Board staff shall assure that the requirements of the Program are communicated to interested parties, including dischargers with existing authorizations under the General Construction Permit. Existing, authorized dischargers shall revise their project SWPPPs as needed to address the Program requirements as soon as possible but no later than (*three months of completion of the SWPPP Improvement Program*). Applicable SWPPPs that do not adequately address the Program requirements shall be considered inadequate and enforcement by the Regional Board shall proceed accordingly. The Caltrans and Orange County MS4 permits shall be revised as needed to assure that the permittees communicate the Regional Board's SWPPP expectations, based on the SWPPP Improvement Program, with the Standard Conditions of Approval.

The MS4 permittees shall conduct studies to evaluate BMPs that are most appropriate for reducing or eliminating organochlorine compound discharges from construction sites (e.g., fine particulates), including advanced treatment BMPs. The evaluation shall consider the potential for adverse environmental effects associated with implementation of each of the BMPs identified. MS4 Permittees shall include these BMPs in the Orange County Stormwater Program Construction Runoff Guidance Manual and the Caltrans Storm Water Management Plan (SWMP). Implementation of these MS4 permittee requirements shall commence upon issuance of appropriate Water Code Section 13267 letters or renewal of the MS4 permits, whichever occurs first. The Section 13267 letters/revised permits shall require the permittees to: (a) submit a proposed plan and schedule for studies to evaluate appropriate BMPs, as described above, within three months of issuance of the 13267 letter or permit revision; (b) implement the plan and schedule upon approval by the Regional Board's Executive Officer; (c) submit a report of the BMP investigations within 6 months of approval of the study plan, provided that sufficient storms, as defined in the study plan, have occurred within that period. If the number of storms does not conform to the study plan, then the report shall be submitted in accordance with a schedule approved by the Executive Officer once the requisite number of storms has occurred. The report shall include a proposed plan and schedule for implementation of the BMPs, as appropriate, and inclusion of the BMPs in the Orange County Guidance Manual and in the Caltrans SWMP and related guidance documents; (d) implement the BMP plan upon approval by the Executive Officer.

The MS4 permittees may address these SWPPP and construction site BMP-related requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

Task 5: Evaluate Sources of OCs to San Diego Creek and Newport Bay; Identify and Implement Effective BMPs to Reduce/Eliminate Sources

Based on the regional monitoring program being implemented by the Orange County MS4 permittees and/or on the results of other monitoring and investigations, all MS4 permittees shall conduct source analyses in areas tributary to the MS4 system demonstrating elevated concentrations of OCs. Based on mass emissions monitoring (described below) and source analysis, the permittees shall implement additional/enhanced BMPs as necessary to ensure that organochlorine discharges from significant land use sources to surface waters are reduced or eliminated. As part of the investigation task, if the results indicate that additional OCs soil remediation is necessary on MCAS Tustin and MCAS El Toro, the responsible parties for such remediation will be identified. The responsible party will be tasked to implement those portions of the BMP plan identified for the responsible party for MCAS Tustin and MCAS El Toro.

The permittees shall develop and implement a collection program for all banned OC pesticides and PCBs. This type of program has had demonstrated success in other geographic areas in collecting and disposing of banned pesticides. Residents and businesses in the watershed may have stored legacy pesticides that could be collected through such a program; if this is the case, this task would prevent future use and improper disposal of these banned pesticides.

Implementation of these requirements shall commence upon issuance of appropriate Water Code Section 13267 letters or approval of an appropriately revised MS4 permits, whichever occurs first. Revisions to the Orange County MS4 permit and Caltrans SWMP shall implement requirements specified in applicable Section 13267 letters, if used to implement TMDL-related requirements. The 13267 letters/revised permit shall specify require the permittees to: (a) submit a proposed plan and schedule for source analyses of MS4 tributary areas with elevated OCs concentrations within 3 months of issuance of the 13267 letters or permit revision: (b) implement the proposed plan upon approval by the Regional Board's Executive Officer; (c) submit a report within 6 months of completion of the approved study plan. The report shall provide the study results and include a proposed plan and schedule for prioritized implementation of BMPs in OCs source areas; (d) implement the BMP plan upon Executive Officer approval.

The permittees may address these requirements through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan (Task 7).

Task 6: Evaluate Feasibility and Mechanisms to Fund Future Dredging Operations

Because large-scale erosion and sedimentation primarily occurs during large storm events, traditional BMPs may have limited success in reducing/eliminating the discharge of potentially-contaminated sediments to receiving waters during wet weather. In such cases, dredging within Newport Bay and/or San Diego Creek may be the most feasible and appropriate method of reducing OCs loads in these waters. However, the feasibility and effectiveness of dredging projects in removing OCs would require careful consideration, since dredging may or may not expose sediments with higher concentrations of OCs. Financing of such projects is also a significant consideration.

Entities discharging potentially contaminated sediment in the watershed shall analyze the feasibility of dredging to achieve water quality standards, and shall identify funding mechanisms for ensuring that future dredging operations can be performed, as necessary, within San Diego Creek, Upper and Lower Newport Bay. A report that presents the results of this effort shall be submitted no later than (*three years from the date of OAL approval of this BPA).* It is recognized that dredging activities are likely to be an integral part of efforts to comply with other established TMDLs, particularly the sediment TMDL. Ideally, dredging feasibility and funding investigations would be integrated with implementation and review of the sediment TMDL through the comprehensive Work Plan (Task 7). The responsible parties may address this Task requirement through their participation in the development and implementation of an appropriate, Regional Board approved Work Plan.

Task 7: Develop a Comprehensive Work Plan to Meet TMDL Implementation Requirements, Consistent with the Adaptive Management Approach

During the development of these organochlorine compounds TMDLs, regulated stakeholders in the Newport Bay watershed expressed concerns that the numeric targets used to develop the TMDLs, wasteload allocations and load allocations were flawed and that scientific review by an independent panel of experts was necessary. Further, these stakeholders suggested that pollutants other than the organochlorine compounds, such as metals, pyrethrins or other, emerging pollutants may pose the more real or significant threat to beneficial uses in the watershed. Finally, it was recommended that an integrated approach to TMDL implementation, and to the development of pending TMDLs and refinement of established TMDLs, would be a more effective and efficient approach.

Substantial efforts are already being made by many stakeholders in the watershed to address established permit and/or TMDL requirements for BMP implementation and monitoring and to conduct special investigations to understand and improve water quality conditions in the watershed. Thus, the framework exists to develop a

comprehensive watershed plan for addressing water quality, not only as it relates to the organochlorine compounds, but on a larger scale that encompasses all sources of water quality impairment.

This implementation plan provides the opportunity for regulated stakeholders to form a Working Group and to participate in the development and implementation of a comprehensive Work Plan to evaluate the scientific basis of these organochlorine TMDLs, to prioritize TMDL implementation tasks, to integrate implementation with other TMDL and/or permit requirements, and to investigate unknown sources of toxicity in the watershed. As noted in the previous Task descriptions, participation by responsible parties in the Working Group and the development and implementation of a Regional Board Work Plan would address the responsible parties' obligations pursuant to the Tasks in Table NB-OCs-13. Dischargers who elect not to participate in the Working Group/Work Plan will be required to implement these Tasks, as described above.

Dischargers interested in participating in a Working Group to develop and implement a comprehensive Work Plan must commit to do so by (*within one month of OAL approval of the BPA*). Submittal of a draft Work Plan is required no later than (*three months of OAL approval of the BPA*). The schedules for implementation of the tasks identified in the Work Plan must reflect the shortest practicable time necessary to complete the tasks. Implementation of the Work Plan will commence upon approval of the Work Plan by the Regional Board at a properly noticed public hearing. Execution of the Work Plan must be complete within five years of Regional Board approval. Substantive changes to the tasks and schedules included in the approved Work Plan are contingent on Regional Board approval at a subsequent, properly noticed public hearing(s). However, the Regional Board's Executive Officer is authorized to revise the approved tasks and schedules if no significant comments are received during the public notice period.

At a minimum, the expected result of the execution of the Work Plan is a comprehensive, watershed plan for BMP implementation, monitoring, special investigations and other actions that will assure compliance with the OCs TMDLs, as they may be amended, as soon as possible after completion of execution of the Work Plan but no later than *(seven years from the date of OAL approval of this BPA)*[3].

The specific detailed Work Plan tasks and schedules will be determined as the Work Plan is developed. Regional Board staff will work with the Working Group to identify a suitable Work Plan. Key initial tasks are expected to include the following:

1. Convene an Independent Advisory Panel (IAP) of experts with relevant expertise. To avoid questions of objectivity, the panel shall be convened by a neutral third party organization such as the National Water Research Institute. The Working Group and Regional Board staff will work together to define the

[3] This compliance date is subject to change through the Basin Planning process.

desired qualifications needed for IAP participants, define the scope and authority of the IAP, and identify and describe the primary issues that will require guidance, recommendations, or specific actions from the IAP.

2. Re-evaluate OCs TMDLs Numeric Targets and Loads

With input and recommendations from the IAP, and using data being generated through ongoing scientific investigations in the watershed, the Work Plan should assess the current OCs TMDLs numeric targets, evaluate potential alternative numeric targets, and determine if the current targets should be revised, or whether targets based on site-specific data can be developed. If site-specific targets can be developed, the process or methods that will be used to develop targets should be determined, such as risk assessments or re-calculation of targets using accepted, peer-reviewed scientific methodologies.

It is recognized that there is a need for flexibility to respond to unanticipated findings and events, and to changes that may be recommended by the Independent Advisory Panel (see below). However, at a minimum, each of the Tasks identified in Table NB-OCs-13 (except Task 1, which requires action by the Regional Board, and Task 4, which requires action by the Regional Board and the MS4 permittees based on established MS4 permit requirements) must be considered in Work Plan development and implementation. If one or more of these tasks is not proposed for inclusion in the Work Plan, or where modifications of these tasks/schedules are recommended, a written description and justification must be provided with the draft Work Plan submittal. In addition, consideration shall be given to the following:

Develop conceptual models

Data interpretation and monitoring must be organized around a systematic conceptual view of the sources of the different organochlorine compounds and their distribution and behavior in the watershed. Development of conceptual models for these compounds would significantly enhance our understanding of their sources and impacts and would help to structure hypothesis development, monitoring design, and data interpretation. Development of the conceptual models should be based on a review of available data and information about the OCs in the watershed, and the models should be updated as new information accumulates. Characterization of sources and of habitats at risk should be based on a review of available data, framed in terms of the conceptual models and supported with the collection of new data as needed. It is expected that the IAP would provide critical review and recommendations in this process.

Develop Information Management System

Different types of data – water column, sediment, fish or bird egg tissue, infaunal surveys, hydrology, etc. – are being or will be collected throughout the Newport Bay watershed through a variety of studies, monitoring programs, or other projects. Since these data are often collected for different purposes (e.g., in response to various TMDLs and/or permits), at different times and in different areas, much of the data may be in non-comparable formats, redundant, or not spatially or temporally compatible. In order to determine what data are useful or significant, where data gaps may still occur, or where current data needs are sufficient, a comprehensive information management system should be developed that (1) establishes clear procedures for assessing data quality for data acquisition and transfer and for control of evolving versions of datasets; (2) is a relational database that can manage the variety of data types and has appropriate mechanisms for ensuring and maintaining data quality; (3) can conduct quality control checks and needed reformatting to ensure needed consistency across all data types and sources as data from other sources are obtained; (4) provides for straightforward query and data sub-setting routines to streamline access to the data; and (5) ensures that GIS capability is available for analysis, modeling, and presentation purposes. Development of a comprehensive information management system will allow for the identification of significant data gaps that need to be addressed and will provide a vehicle for establishing monitoring guidelines and preventing redundant or superfluous data collection.

To the extent that there are any conflicts between the individual tasks and schedules identified in Table NB-OCs-13, and the prioritized plan and schedule identified in the Work Plan, the Work Plan would govern implementation activities with respect to the stakeholders responsible for Work Plan development and implementation as part of the Working Group.

Task 8: Revise Regional Monitoring Program

The County of Orange, as Principal Permittee under the County's MS4 permit, oversees the countywide monitoring program. Implementation of the monitoring program is supported by funds shared proportionally by each of the Permittees named in the Orange County MS4 permit. Some monitoring requirements identified in this implementation plan are already reflected in the current program.

By (*3 months from OAL approval of BPA),* the Orange County MS4 permittees shall: (1) document each of the current monitoring program elements that addresses the monitoring requirements identified in the preceding tasks; and, (2) revise the monitoring program as necessary to assure compliance with these monitoring requirements.

Review of/revisions to the monitoring program shall address:

(1) Estimation of mass emissions of chlordane, DDT, PCBs and toxaphene.
(2) Determination of compliance with MS4 wasteload allocations for Upper and Lower Newport Bay, and of status of achievement with the informational wasteload allocations for San Diego Creek for chlordane and PCBs.
(3) Assessment of temporal and spatial trends in organochlorine compound concentrations in water, sediment and tissue samples.
(4) Semi-annual sediment monitoring in San Diego Creek and Newport Bay. Measurements of sediment chemistry in these waters should be evaluated with respect to evidence of biological effects, such as toxicity and benthic community degradation.
(5) Evaluation of organochlorine bioaccumulation and food web biomagnification
(6) Assessment of the degree to which natural attenuation is occurring in the watershed.

Accurately quantifying the very small mass loads that are allowable under these TMDLs will be very challenging; analytical strategies for quantifying loads of the organochlorine compounds must be carefully explored.

Revisions to the monitoring program shall take into consideration the following recommendations provided by members of the Organochlorine Compounds TMDL Technical Advisory Committee (TAC):

(1) The analytical parameters measured need to be established for each matrix of interest (e.g., sediment, tissue, ambient water). The representative list of compounds to be measured needs to be identified (e.g., what chlordane compounds will be measured and summed to represent "total chlordane;" will PCB congeners be measured and summed or will Aroclors?).
(2) Data quality will need to be consistent with the State's Surface Water Ambient Monitoring Program (SWAMP). Detection limits, accuracy and precision of analytical methods should be adequate to assure the goals of the monitoring efforts can be achieved.
(3) Bioaccumulation/biomagnification in high trophic level predators may not immediately respond to load reductions; appropriate time scales and schedules for monitoring that are supported by empirical data and/or modeling should be established.
(4) Sentinel fish and wildlife species should be selected for monitoring based on home range, life history, size and age.

MS4 permittees may address the requirements specified herein by participation in the Working Group and development and implementation of an appropriate, Regional Board approved Work Plan (see Task 7).

Task 9: Conduct Special Studies

The following special studies should be conducted, in addition to the studies already underway in the watershed. This list is based, in part, on recommendations of the technical advisory committee for the organochlorine compounds TMDLs. These studies will be implemented as resources become available, and the results will be used to review and revise these TMDLs. Stakeholder contributions to these investigations are encouraged and would facilitate review of the TMDLs.

(1) Evaluation of sediment toxicity in San Diego Creek and tributaries, and Upper and Lower Newport Bay.

Previous studies have included Toxicity Identification Evaluations (TIEs) that have yielded inconclusive results as to the cause of toxicity in Newport Bay. Sediment toxicity within San Diego Creek is not well-documented or well-understood. There is evidence that pyrethroid compounds may be a significant contributor. In determining the extent to which nonpolar organic compounds are causing or contributing to sediment toxicity, the differential contribution of both the organochlorine compounds and pyrethroids should be determined to assure that control actions are properly identified and implemented. Monitoring should be performed year-round at multiple locations within San Diego Creek and Newport Bay (to encompass spatial and temporal variability), and should include various land use types in order to quantify the relative contributions from various sources.

(2) Refinement of sediment and tissue targets.

A study is being conducted by the San Francisco Estuary Institute to develop indicators and a framework for assessing the indirect effects of sediment contaminants. The objective is to provide methodology that will assist in evaluating indirect adverse biological effects for bioaccumulative pollutants (e.g. due to food web biomagnification), as part of the overall goal of developing statewide sediment quality objectives. Newport Bay is being used as a case study to show how the proposed methodology could be implemented on a screening level. Multiple lines of evidence will be evaluated to determine impacts of organochlorine pesticides and PCBs to humans and wildlife. A conceptual foodweb model will be developed, and sensitive wildlife receptors will be identified. Empirical field data and a steady-state food web model will be used to calculate bioaccumulation factors for the organochlorine compounds. The bioaccumulation factors will be combined with effects thresholds to identify sediment concentrations that are protective of target wildlife and humans.

Once completed by SFEI, a thorough evaluation of the Newport Bay case study needs to be initiated, and any additional analyses required for a more in-depth risk analysis should be identified and completed. Protective sediment and tissue targets

for indirect effects to humans and wildlife should be developed by the time the TMDLs are re-opened. Furthermore, once TIEs have identified the likely toxicant(s) responsible for sediment toxicity in San Diego Creek and Newport Bay (direct effects), field and laboratory studies should be conducted in order to determine bioavailability and the dose-response relationship between sediment concentrations and biologic effects.

(3) Evaluation of regional BMPs (e.g., constructed wetlands and sediment detention basins) for mitigating potential adverse water quality impacts of sediment-associated pollutants (e.g., OCs, pyrethroids).

Large-scale, centralized BMPs such as constructed wetlands and storm water retention basins may be more effective than project-level BMPs in reducing adverse environmental impacts of sediment-borne pollutants. Regional BMPs are either being planned or are in place within the watershed (e.g., IRWD NTS). Their potential effectiveness for capturing the organochlorine compounds and mitigating impacts needs to be evaluated.

(4) Improvement in linkage between toxaphene measured in fish tissue and toxaphene in bed sediments.

The toxaphene impairment listing for San Diego Creek is based on fish tissue exceedances that have no measured linkage with toxaphene in sediments. While sediment is the primary TMDL target for these TMDLs, toxaphene is usually not detected in sediment. Because of its chemical complexity, there is a large degree of analytical uncertainty with measurements of toxaphene in environmental samples that use standard methods (e.g., EPA Method 8081a), especially at low levels. Confirmations of toxaphene in fish and sediment samples in San Diego Creek (and possibly Newport Bay) using other techniques (e.g., GC-ECNI-MS or MS/MS) is recommended.

(5) Evaluation of relative importance of continuing OCs discharges to receiving waters through erosion and sedimentation processes, versus recirculation of existing contaminated bed sediments, in causing beneficial use impairment in San Diego Creek and Newport Bay.

This study should allow for determination of the most effective implementation strategies to reduce organochlorine compounds in the MS4 and other receiving waters.

Phase II Implementation

Task 10: TMDL Reopener

These TMDLs will be reopened no later than (*five (5) years following OAL approval of this BPA*) in order to evaluate the effectiveness of Phase I implementation. At that time, all new data will be evaluated and used to reassess impairment, BMP effectiveness, and whether modifications to the TMDLs are warranted. If BMPs implemented during Phase I have been shown to be ineffective in reducing levels of organochlorine compounds, then more stringent BMPs may be necessary during Phase II implementation.

Implementation of these TMDLs and the schedule for implementation are very closely tied with other TMDLs that are currently being implemented in the watershed. The sediment TMDL allowable load for San Diego Creek was the basis for calculating organochlorine compound loading capacities. The sediment TMDL is scheduled for revision in 2007; changes to the sediment TMDLs will likely necessitate changes to these organochlorine compounds TMDLs as well.

EXHIBIT 2 of R8-2011-0037

ATTACHMENT 1 TO RESOLUTION NO. R8-2007-0024

CEQA FINDINGS OF FACT
AND
STATEMENT OF OVERRIDING CONSIDERATIONS

For the Organochlorine Compounds Total Maximum Daily Loads for San Diego Creek, Upper Newport Bay and Lower Newport Bay
Substitute Environmental Document

September 7, 2007

I. Introduction

A Substitute Environmental Document (SED) (July 25, 2007) was prepared by Santa Ana Regional Water Board staff to evaluate the potential adverse environmental effects of the reasonably foreseeable methods of compliance with Regional Board staff's recommended organochlorine compounds Total Maximum Daily Loads (TMDLs) for San Diego Creek, Upper Newport Bay and Lower Newport Bay. This SED describes and was prepared in conformance with applicable requirements for compliance with the California Environmental Quality Act (CEQA) (Public Resources Code, Sec. 21000 *et seq.*) and the CEQA Guidelines (California Code of Regulations, tit. 14, Sec. 15000 *et seq.*) These findings have been prepared also to comply with the requirements of CEQA.

II. Project Description

The project entails the adoption of a Basin Plan amendment to incorporate organochlorine compounds TMDLs for San Diego Creek, Upper Newport Bay and Lower Newport Bay and the implementation of these TMDLs. The amendment includes the implementation plan.

Based on findings of impairment of water quality standards due to certain organochlorine compounds in San Diego Creek (DDT and toxaphene), Upper Newport Bay (DDT, chlordane, PCBs) and Lower Newport Bay (DDT, chlordane and PCBs), these waterbody-pollutant combinations are included on the state and USEPA-approved 2004-2006 Clean Water Act Section 303(d) list for California. Per the Clean Water Act and implementing regulations, placement on the 303(d) list triggers the development and implementation of TMDLs to correct the impairment.

Based on earlier 303(d) listings, in 2002, USEPA established toxic substance TMDLs for San Diego Creek, Upper Newport Bay and Lower Newport Bay. USEPA's TMDLs included the organochlorine compounds identified above, as well as certain other organochlorine compounds. The organochlorine compound TMDLs recommended by Regional Board staff would supplant those established by the USEPA upon their approval by the state and USEPA.[1]

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[1] As a matter of information, in the absence of adoption and approval of the Regional Board's TMDLs, the Board must implement the organochlorine compounds TMDLs established by USEPA. The USEPA TMDLs do not include an implementation plan. Accordingly, the Regional Board would employ best professional judgment to determine the requirements, including permit limitations, to be specified for responsible parties to implement the USEPA TMDLs. In determining the appropriate requirements, the Regional Board must assure that other relevant regulations, for example, the established Sediment TMDL for the Newport Bay/San Diego Creek watershed, are implemented as well.

As noted above, the TMDLs recommended by Regional Board staff include an implementation plan that identifies specific actions to be taken by the Regional Board and dischargers of covered pollutants in the watershed. The implementation plan also establishes compliance schedules for the completion of the specified actions and for ultimate compliance with the TMDLs.

The purpose of a TMDL, including the organochlorine compounds TMDLs, is to achieve requisite reduction of the inputs of the pollutant(s) causing impairment such that water quality standards are achieved. Water quality standards include beneficial uses and narrative and numeric water quality objectives. It is required by law and in the public interest to implement the organochlorine compounds TMDLs to assure that uses of the affected waterbodies for aquatic and terrestrial wildlife, including species that are or may be listed by state and/or federal agencies as endangered or threatened, are protected. Implementation of the TMDLs is also necessary to assure the protection of the health of human consumers of fish and other organisms that may contain one or more of the organochlorine compounds addressed by the recommended TMDLs.

The technical basis for and derivation of the proposed TMDLs and their individual components, including the numeric targets, wasteload allocations and load allocations, are described in detail in the November 17, 2006 TMDL technical report prepared by Regional Board staff and in supplemental staff reports (April 20, 2007, September 7, 2007). The implementation plan for the TMDLs is also described in these reports.

III. Background

A detailed discussion of the environmental and regulatory setting for the organochlorine compounds TMDLs is provided in Section 3 of the July 25, 2007 Substitute Environmental Document.

IV. Findings Required Under CEQA

Public Resources Code section 21002 provides that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would *substantially lessen* the significant environmental effects of such projects. (Emphasis added.) The same statute states that the procedures required by CEQA are intended to assist public agencies in systematically identifying both the significant effects of projects and the feasible alternatives or feasible mitigation measures that will *avoid* or *substantially lessen* such significant effects. (Emphasis added.) Public Resources Code section 21002 further states in the event that specific economic, social, or other conditions make infeasible such project alternatives or such

mitigation measures, individual projects may be approved in spite of one or more significant effects. In this case, for each significant environmental effect identified in the environmental document (here, the SED, which includes an environmental checklist) for a proposed project, the approving agency must issue a written finding reaching one or more of three permissible conclusions. The first such finding is that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the environmental document. (CEQA Guidelines,[2] Sec. 15091(a)(1)). The second permissible finding is that such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (CEQA Guidelines, Sec. 15091(a)(2).) The third potential conclusion is that specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or project alternatives identified in the environmental document (CEQA Guidelines, Sec. 15091(a)(3).) Public Resources Code section 21061.1 defines "feasible" to mean capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors. CEQA Guidelines section 15364 adds another factor: legal considerations. (See also *Citizens of Goleta Valley v. Board of Supervisors* (*Goleta II* (1990) 52 Cal.3d 553, 565.) The concept of feasibility also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417.)

The CEQA Guidelines do not define the difference between avoiding a significant environmental effect and merely substantially lessening such an effect. The meaning of these terms must be gleaned from the other contexts in which the terms are used. Public Resources Code section 21081, on which CEQA Guidelines section 15091 is based, uses the term "mitigate" rather than "substantially lessen." The CEQA Guidelines therefore equate mitigating with substantially lessening. Such an understanding of the statutory term is consistent with the policies underlying CEQA, which include the policy that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects. (Pub. Resources Code, sec. 21002.)

For purposes of these findings, the term "avoid" refers to the effectiveness of one or more mitigation measures to reduce an otherwise significant effect to a less than significant level. In contrast, the term "substantially lessen" refers to the effectiveness of such measure or measures to substantially reduce the severity of a significant effect, but not to reduce that effect to a less than significant level.

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[2] The CEQA Guidelines are found at Title 14, California Code of Regulations, Section 15000 et seq.

These interpretations appear to be mandated by the holding in *Laurel Hills Homeowners Association v. City Council* (1978) 83 Cal.App.3d 515, 519-527, in which the Court of Appeal held that an agency had satisfied its obligation to substantially lessen or avoid significant effects by adopting numerous mitigation measures, not all of which rendered the significant impacts in question (e.g., the aesthetic and visual character) less than significant.

In short, CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Project modification or alternatives are not required, however, where such changes are infeasible or where the responsibility for modifying the project lies with some other agency. (CEQA Guidelines, Sec. 15091(a), (b).)

Although CEQA Guidelines section 15091 requires only that approving agencies specify that a particular significant effect is avoided *or* substantially lessened, these findings, for purposes of clarity, in each case will specify whether the effect in question has been reduced to a less than significant level, or has simply been substantially lessened but remains significant.

V. Significant Effects and Mitigation Measures

The Substitute Environmental Document (SED) identifies environmental impacts according to their characterization in the environmental checklist: (1) potentially significant; (2) less than significant with mitigation incorporation; (3) less than significant; and (4) no impact.

Potentially significant impacts. These are impacts that are potentially significant, but not completely mitigable. While, as described in the discussion of each of these impacts in the SED, mitigation measures can be employed to substantially lessen these effects, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). These impacts are also known as "significant and unavoidable" impacts. These effects are outweighed by overriding considerations in favor of the project as set forth in Section VII, below.

Less than significant with mitigation incorporation. These are potentially significant impacts that can be reduced to less than significant as the result of the incorporation of mitigation measures. Again, these mitigation measures are described in the SED.

Less than significant impacts and those described as "no impact" are not required to be included in the Findings per the CEQA Guidelines.

This Section presents the Regional Board's findings with respect to the environmental effects identified as (1) potentially significant and (2) less than significant with mitigation incorporation. Applicable references to the checklist and description of mitigation measures in the SED are provided. Both this document and the SED are integral components of these findings of fact.

Checklist: I. Aesthetics

Impacts on Aesthetics will be significant if they result in any of the following:

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

Project Impacts: Less than significant with mitigation incorporation (a, b, c and d)

Mitigation: Discussion of the aesthetic impacts of reasonably foreseeable methods of TMDL compliance and mitigation measures is provided on pages 24-27 of the SED. Planning, design, and siting of structural BMPs implemented to comply with the TMDLs, the use of vegetative or other buffers, proper timing of construction and operation of structural BMPs, shielding of light fixtures and low-intensity, directional lighting and rotational timing of light fixtures can and should reduce these impacts to less than significant levels.

Finding: Mitigation measures are available to reduce aesthetics impacts to less than significant. These mitigation measures can and should be required by local lead and responsible agencies through their project-specific CEQA, planning, project approval and/or project permitting processes.

Checklist II. Agriculture Resources

Impacts on Agriculture Resources will be significant if they result in any of the following:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;

c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

Project Impacts: No impact (a, b and c).

Mitigation: None necessary. See SED, pages 27 and 28.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist: III. Air Quality

Impacts on Air Quality will be significant if they result in any of the following:

a) Conflict with or obstruct implementation of the applicable air quality plan;
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
d) Expose sensitive receptors to substantial pollutant concentrations;
e) Create objectionable odors affecting a substantial number of people.

Project Impacts: Potentially significant (a, b, c and d); Less than significant with mitigation incorporation (e).

Mitigation: Discussion of the air quality impacts of the reasonably foreseeable methods of compliance with these TMDLs and mitigation measures is provided on pages 28-31 of the SED. Use of the following can and should reduce the impacts identified in a through d, but these impacts may remain significant: low-emission vehicles/equipment, soot reduction traps/diesel particulate filters, emulsified diesel fuel; vacuum-assisted street sweepers; design of BMPs to minimize the need for maintenance; proper vehicle maintenance; use of moisture control measures to reduce fugitive dust. Use of these measures, coupled with design and operation measures intended to prevent stagnation of any standing water and devices to reduce odors (e.g., filters, aeration devices, odor-suppressing chemical additives) can and should reduce the odor-related impacts (e) to less than significant.

Finding: While mitigation measures can be employed to substantially lessen the effects identified in a, b, c and d, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). However, these effects are outweighed by overriding considerations (see Section VII). Mitigation measures are available

to reduce impacts resulting from objectionable odors that affect a substantial number of people (e) impacts to less than significant. These mitigation measures can and should be required by local lead and responsible agencies through their project-specific CEQA, planning, project approval and/or permitting processes.

Checklist: IV. Biological Resources

Impacts on Biological Resources will be significant if they result in any of the following:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service;
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Project Impacts: Potentially significant (a); Less than significant with mitigation incorporation (b, c, d and f). (No impact (e)).

Mitigation: The biological resources impacts of reasonably foreseeable methods of compliance with the TMDLs and mitigation measures are discussed on pages 31-35 of the SED. Each project that may be considered by responsible dischargers to comply with the TMDLs will be subject to detailed, project-specific CEQA and, where required, National Environmental Policy Act (NEPA) review by responsible agencies, including the Regional Board, Department of Fish and Game and the U.S. Fish and Wildlife Service. Prior consultation with the Department of Fish and Game and the U.S. Fish and Wildlife Service, through the pre-project planning and/or CEQA-NEPA processes, and implementation of avoidance/mitigation measures imposed by those agencies, will reduce the effects of TMDL control measures on special status species. However, the

finding of potential significance is required when special status species may be affected. Proper planning, design and implementation of methods of compliance, in coordination with the Department of Fish and Game, U.S. Fish and Wildlife Service and Regional Board (in response to CEQA, Clean Water Act (CWA) Section 401 water quality certification/waste discharge requirements) and with established conservation plans, will assure that the potential effects identified in b, c, d and f are reduced to less than significant levels.

Finding: Mitigation measures are available to reduce the effects on special status species (a) identified by the Department of Fish and Game and the U.S. Fish and Wildlife Service through pre-project planning and/or CEQA-NEPA processes. To the extent that the methods of TMDL compliance employed necessitate CWA Sec. 401 certification and issuance of waste discharge requirements, the Regional Board shall incorporate appropriate avoidance and mitigation requirements based on consultation with the Department of Fish and Game and U.S. Fish and Wildlife Service. The Regional Board will also serve as a responsible agency for project-specific CEQA analyses and identify measures necessary to mitigate the water quality standards impacts of proposed compliance projects, including impacts on special status species and other biological resources. To the extent that any impacts remain significant even with mitigation, these impacts are outweighed by overriding considerations (see Section VII). Mitigation measures can and should also be required by the Department of Fish and Game and U.S. Fish and Wildlife Service for impacts on special status species.

Similarly, the biological resource effects identified in b, c, d and f can be mitigated to less than significant levels. Appropriate mitigation requirements will be specified in CWA 401 certifications and waste discharge requirements issued by the Regional Board as necessary and appropriate to regulate the implementation of control measures. Appropriate mitigation measures will also be identified by the Regional Board in project-specific CEQA reviews to address potential water quality standards impacts, including impacts on biological resources. The Department of Fish and Game and U.S. Fish and Wildlife Service can and should also require the implementation of appropriate avoidance and mitigation methods through their permitting, consultation and CEQA-NEPA processes. Local agencies with relevant plans, policies or ordinances can and should assure that the methods of compliance conform to those plans, policies and ordinances and require appropriate avoidance and mitigation, where necessary. These actions can and should be taken through the local agencies through their project-specific CEQA, planning, project approval and/or permitting processes.

For checklist item (e), the project will have no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or

where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist V. Cultural Resources

Impacts on cultural resources will be significant if they result in any of the following:

a) Cause a substantial adverse change in the significance of a historical resource as defined in CCR Tit. 14 15064.5;
b) Cause a substantial adverse change in the significant of an archaeological resource pursuant to CCR Tit. 14 15064.5;
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
d) Disturb any human remains, including those interred outside of formal cemeteries.

Project Impacts: Less than significant with mitigation incorporation (a, b, c and d)

Mitigation: The cultural resource impacts of reasonably foreseeable methods of compliance with the TMDLs and mitigation are discussed on pages 35 and 36 of the SED. Proper planning, site-design and site selection can reduce these effects to less than significant levels.

Finding: Mitigation measures are available to reduce cultural resources impacts to less than significant. Local agencies can and should require site-relocation and/or alternative project design/implementation to mitigate these potential impacts. These actions can be taken through the local agencies' project-specific CEQA, planning, project approval and/or permitting processes.

Checklist VI. Geology and Soils

Impacts on geology and soils will be significant if they result in any of the following:

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

b) Result in substantial soil erosion or the loss of topsoil;
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

Project Impacts: Less than significant with mitigation incorporation (b, c and d) (No impact: a and e).

Mitigation: The geology and soils impacts of reasonably foreseeable methods of compliance with the TMDLs and mitigation are discussed on pages 36-38 of the SED. Local and state requirements for sediment control measures for construction activities are in place as the result of NPDES permits issued by the State Water Board/Regional Water Board (general construction permit/MS4 permit). Proper siting (to ensure that structural BMPs are not employed in areas subject to unstable soil conditions), engineering design and operation of control measures, coupled with pre-project geotechnical investigations and groundwater level monitoring where necessary to determine site suitability, can reduce these impacts to less than significant levels.

For checklist items (a) and (e), the project will have no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Finding: Mitigation measures are available to reduce geology and soils impacts to less than significant. Local agencies can and should require proper evaluation of control measure site location and design and implementation of alternatives as necessary as part of their project-specific CEQA, planning, project approval and/or permitting processes. Local agencies and the Regional Board shall adopt new requirements, revise existing requirements as necessary and enforce existing and new/revised requirements for the implementation of effective erosion and sedimentation control measures.

Checklist: VII. Hazards and Hazardous Materials

Impacts related to hazards and hazardous materials will be significant if they result in any of the following:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;
f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Project Impacts: Less than significant with mitigation incorporation (a, e, f and g); (Less that significant (b and h); No impact c and d).

Mitigation: The hazards and hazardous materials-related impacts of the reasonably foreseeable methods of compliance with the TMDLs and mitigation are described on pages 38-42 of the SED. These impacts can be reduced to less than significant levels by one or more of the following: proper handling, storage and disposal procedures for hazardous materials; pre-project site characterization and consideration of project alternatives, including alternative sites and project designs that would avoid or minimize the exposure of hazardous materials; provision of specific materials/equipment storage and parking areas; use of temporary streets to reduce traffic obstruction; proper timing of transport of oversize trucks and equipment.

Finding: Mitigation measures are available to reduce impacts related to hazards and hazardous materials to less than significant levels. These mitigation measures can and should be required by local lead and responsible agencies through their project-specific CEQA, planning, project approval and/or permitting processes. The Regional Board will also identify appropriate mitigation measures to protect water quality standards through project-specific CEQA reviews.

For checklist items (b), (c), (d), and h, the project will have a less than significant impact or no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist: VIII. Hydrology and Water Quality

Hydrology and water quality Impacts will be significant if they result in any of the following:

a) Violate any water quality standards or waste discharge requirements;
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site;
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-site or off-site;
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
f) Otherwise substantially degrade water quality;
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
j) Inundation by seiche, tsunami, or mudflow.

Project Impacts: Less than significant with mitigation incorporation (a,c,d,f,i,j); Less than significant (b); No impact (e,g,h).

Mitigation: The hydrology and water quality impacts of the reasonably foreseeable methods of compliance with the TMDLs and mitigation are described on pages 42-46 of the SED. These impacts can be reduced to less than significant with the implementation of one or more of the following: standard BMPs (e.g., silt fences, installation of small-scale retention basins, construction of swales, proper use of chemical flocculating agents such as polyacrylamide monomer (PAM) to hold sediment in place; proper siting, design and operation of structural BMPs; adequate consideration of potential seismic effects in planning, design and construction of large-scale structural BMPs.

Finding: Mitigation measures are available to reduce hydrology and water quality impacts to less than significant levels. These mitigation measures can and should be required by local lead and responsible agencies through their project-specific CEQA, planning, project approval and/or permitting processes. The Regional Board shall adopt conditions in CWA Sec. 401 certifications (where applicable), issue new waste discharge requirements, revise existing waste discharge requirements as necessary and enforce existing/new/revised requirements to assure the implementation of effective erosion and sedimentation control measures and compliance with 401 certification conditions/waste discharge requirements. The Regional Board will also identify appropriate mitigation measures as needed through the project-specific CEQA review process.

For checklist items (b), (e), (g) and (h) the project will have a less than significant impact or no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist: IX. Land Use and Planning

Impacts on land use and planning will be significant if they result in any of the following:

a) Physically divide an established community;
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

Project Impacts: No impact (a); Less than significant (b and c)

Mitigation: None necessary. See SED, pages 46 and 47.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091)

Checklist: X. Mineral Resources

The impacts on mineral resources will be significant if they result in any of the following:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state;

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan..

Project Impacts: Less than significant with mitigation incorporation (a and b)

Mitigation: The mineral resources impacts of the reasonably foreseeable methods of compliance with the TMDLs and mitigation are described on pages 47 and 48 of the SED. Impacts to mineral resources can be avoided or reduced by proper planning, site design and consideration/selection of alternative locations.

Finding: Mitigation measures are available to reduce mineral resource impacts to less than significant levels. These mitigation measures can and should be required by local lead and responsible agencies through their CEQA, planning, project approval and/or permitting processes.

Checklist: XI. Noise

Noise impacts will be significant if they result in any one of the following:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels;
f) For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

Project Impacts: Potentially significant (a, b, d, e and f). No impact (c).

Mitigation: The noise impacts of the reasonably foreseeable methods of compliance with the TMDLs and mitigation are discussed on pages 48-50 of the SED. Noise impacts can be reduced but not completely avoided by preparation and implementation of site-specific operational plans that specify measures to limit noise impacts, including: project timing to minimize public exposure, the use of sound barriers such as walls or vegetation, and proper operation and

maintenance of vehicles and equipment fitted with mufflers; proper operation and maintenance of equipment; timing of equipment transport to minimize public exposure to noise/groundborne vibration.

Finding: While mitigation measures can be employed to substantially lessen the noise impacts identified in a, b, d, e and f, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). However, these effects are outweighed by overriding considerations (see Section VII). The available mitigation measures can and should be required by local lead and responsible agencies through their CEQA, planning, project approval and/or permitting processes.

For checklist item (c) the project will have no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist: XII. Population and Housing

Population and housing impacts will be significant if they result in any of the following:

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

Project Impacts: No impact (a, b, and c).

Mitigation: None necessary. See SED, pages 50-51.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091).

Checklist: XIII. Public Services

Public services impacts will be significant if they result in any of the following:

a) Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant

environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
Fire protection
Police protection
Schools
Parks
Other public facilities

Project Impacts: No impact.

Mitigation: None necessary. See SED, page 51-52.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091).

Checklist: XIV. Recreation

The recreation impacts will be significant if they result in any of the following:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated;
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Project impacts: Less than significant (a); No impact (b).

Mitigation: None necessary. See SED, pages 52-53.

Finding: Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091).

Checklist: XV. Transportation/Traffic

Transportation/traffic impacts will be significant if they result in any of the following:

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
e) Result in inadequate emergency access;
f) Result in inadequate parking capacity;
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Project Impacts: Potentially significant (a and b); less than significant with mitigation incorporation (d); less than significant (f); no impact (c, e and g).

Mitigation: The transportation/traffic impacts of reasonably foreseeable methods of compliance with the TMDLs and mitigation are discussed on pages 53-55 of the SED. Transportation/traffic impacts can be reduced but, in the case of (a) and (b), not completely avoided by: changing the timing of vehicle/equipment movement to avoid high traffic periods; proper design and construction of structural BMPs to avoid substantial increased roadway hazards; proper siting and design of BMPs, including additional/alternative parking.

Finding: While mitigation measures can be employed to substantially lessen the transportation/traffic impacts identified in a and b, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). However, these effects are outweighed by overriding considerations (see Section VII). For checklist item (d), mitigation measures are available to reduce transportation/traffic impacts to less than significant levels. The available mitigation measures can and should be required by local lead and responsible agencies through their CEQA, planning, project approval and/or permitting processes.

For checklist items (c), (e), (f) and (g) the project will have a less than significant impact or no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist: XVI. Utilities and Service Systems

The utilities and service systems impacts will be significant if they result in any of the following:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

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

Project Impacts: Potentially significant (c and f); Less than significant (a); No impact (b, d, e, and g).

Mitigation: The utilities and service systems impacts of reasonably foreseeable methods of compliance with the TMDLs and mitigation are discussed on pages 55-58 of the SED. Utilities and service systems impacts can be reduced but, in the case of (c) and (f), not completely avoided by: proper siting, design, construction and operation of BMPs; implementation of mitigation measures identified in the previous discussions of air quality, transportation/traffic and noise effects (measures may reduce impacts associated with BMP implementation (c), but it is unlikely that these impacts could be completely avoided; see discussions above); use of pre-project planning to anticipate land disposal needs and to assess the need for implementation of project alternatives; use of alternative BMPs, where necessary.

Finding: While mitigation measures can be employed to substantially lessen the utilities and service systems impacts identified in c and f, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). However, these effects are outweighed by overriding considerations (see Section VII). The available mitigation measures can and should be required by local lead and responsible agencies through their CEQA, planning, project approval and/or permitting processes.

For checklist items (a), (b), (d), (e) and (g) the project will have a less than significant impact or no impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

Checklist: XVII. Mandatory Findings of Significance

The impacts of the project will be significant if they result in any of the following:

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

Project Impacts: Potentially significant (a); less than significant with mitigation incorporation (b). (Less than significant (c)).

Mitigation: (a) The implementation of reasonably foreseeable methods of compliance with the proposed TMDLs could result in potentially significant environmental impacts with respect to certain Air Quality, Biological Resources, Noise, Transportation/Traffic, and Utilities and Services considerations. These impacts and mitigation measures are described in the SED on pages 28-31, 31-35, 48-50, 53-55 and 55-58, respectively. Mitigation measures are also summarized in the preceding discussion of these impacts in this Findings of Fact/Statement of Overriding Considerations document. (b) The implementation of reasonably foreseeable methods of compliance with the proposed TMDLs could result in cumulative impacts that are less than significant with mitigation incorporation (SED, p. 59).

Finding: While mitigation measures can be employed to substantially lessen the potentially significant impacts identified above, the effects cannot be wholly avoided (i.e., reduced to less than significant levels). However, these effects are outweighed by overriding considerations (see Section VII). The available mitigation measures can and should be required by local, regional, state and federal lead and responsible agencies through their CEQA/NEPA, planning, project approval, CWA Sec. 401 certification and/or permitting processes.

For checklist item (c) the project will have a less than significant impact. Under CEQA, no mitigation measures are required for impacts that are less than significant, or where there is no impact. (Pub. Resources Code, Sec. 21002; CEQA Guidelines, Sec. 15091.)

VI. Alternatives Analysis and Findings

Where the Regional Board has determined that, even after the adoption of all feasible mitigation measures, the implementation of the proposed organochlorine compounds TMDLs will still cause one or more significant environmental effects that cannot be substantially lessened or avoided, the Regional Board, prior to approving the TMDLs, must first determine whether, with respect to such impacts, there remain any project alternatives that are both environmentally superior and feasible within the meaning of CEQA. An alternative may be "infeasible" if it fails to fully promote the Regional Board's underlying goals and objectives with respect to the TMDLs, or if the alternative does not comply with applicable law or regulation.

As described in Section V of this document and the SED for the TMDLs, most of the significant environmental effects of the reasonably foreseeable methods of compliance with the TMDLs can be lessened to less than significant levels through the imposition of mitigation requirements by local, regional, state or federal agencies. However, in certain cases, the environmental effects remain potentially significant. The following are the potentially significant impacts of the implementation of reasonably foreseeable methods of compliance with the organochlorine compounds TMDLs:

Checklist: III. Air Quality, a, b, c and d, as shown below.

a) Conflict with or obstruct implementation of the applicable air quality plan;
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
d) Expose sensitive receptors to substantial pollutant concentrations;

Checklist: IV. Biological Resources a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

(Note: as described in the SED, page 31-33 and Section V. Significant Effects and Mitigation Measures, Checklist IV. Biological Resources, page 7-8, above, mitigation measures are available to substantially lessen the impacts of reasonably foreseeable methods of compliance on special status species.

However, the potential for adverse impacts on these species necessitates a finding of potentially significant impact.)

Checklist: XI. Noise, a, b, d, e and f, as shown below.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would expose people residing or working in the project area to excessive noise levels;
f) For a project within the vicinity of a private airstrip, the project would expose people residing or working in the project area to excessive noise levels.

Checklist: XV. Transportation/Traffic, a and b, as shown below.

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

Checklist: XVI. Utilities and Service Systems c and f, as shown below.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

g) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

The Regional Board considered a number of alternatives to the recommended TMDLs to determine whether: (1) an environmentally superior alternative is available; and, (2) whether an environmentally superior alternative, if available, would meet the objective of the TMDLs to achieve water quality standards; and, (3) whether an environmentally superior alternative that meets the TMDL objective would be legally feasible. A detailed analysis of alternatives to the

proposed TMDLs is provided in the SED on pages 62-71. Based on that analysis, the Regional Board concludes that:

A. The No Project Alternative (i.e., the Regional Board would not adopt and implement the recommended TMDLs; see SED, section 7.1) is not environmentally superior. In the absence of Regional Board adopted TMDLs that are approved by the state (State Board and the Office of Administrative Law) and the U.S. EPA, the Regional Board is required to implement the organochlorine compounds TMDLs already established by the U.S. EPA (see SED, Sec. 3.2 Regulatory Setting). The implementation of the U.S. EPA TMDLs would have environmental effects comparable to those of the Regional Board staff recommended TMDLs. The No Project Alternative may result in greater environmental effects since there would be no allowance for a compliance schedule to implement the U.S. EPA's TMDLs, nor would there be the explicit opportunity for the coordinated and comprehensive approach to resolve water quality standards concerns affecting Newport Bay and its tributaries that is afforded by the implementation plan recommended by Regional Board staff.

B. The alternative to adopt a Basin Plan amendment to incorporate the U.S. EPA organochlorine compounds TMDLs unchanged and to add a plan to implement those TMDLs is not legally feasible (and, in any case, is not environmentally superior). (See SED, section 7.2.) The U.S. EPA organochlorine compounds TMDLs do not implement established regulations for Newport Bay and its watershed, as expressed in the Sediment TMDL for these waters. The Sediment TMDL is incorporated in the Basin Plan and must be implemented.

C. Use of alternative guidelines for evaluating water quality standards impairment (SED, section 7.3.1) could result in recommendations for delisting from the CWA Sec. 303(d) list one or more of the organochlorine compounds for which TMDLs are now recommended by Regional Board staff. TMDLs would not be required for the delisted compound(s), thereby eliminating the potential environmental effects resulting from implementation of TMDLs for these substances. However, an approved delisting is necessary to obviate the need for some or all of the TMDLs; use of alternative evaluation guidelines in the impairment assessment alone would not suffice to reduce or eliminate the potential environmental effects of the recommended TMDLs. The waterbody-pollutant combinations for which Regional Board staff recommends TMDLs are included in the 2004-2006 CWA Sec. 303(d) list; TMDLs for these waterbody-pollutant combinations are now legally required.

   Use of alternative impairment evaluation guidelines suggested by certain stakeholders during the development of the recommended organochlorine compounds TMDLs is not legally feasible since the suggested guidelines

have not been subject to scientific peer review and thus do not comport with the State Board's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (September 2004)(Listing Policy). In any case, application of alternative evaluation guidelines alone would not be sufficient to effect changes in the set of TMDLs required pursuant to federal law and regulation, as described in the preceding paragraph.

D. Use of alternative numeric targets to develop the TMDLs (SED, section 7.3.2) could result in less stringent TMDLs, requiring reduced implementation of control measures to achieve the TMDLs. Therefore, less stringent numeric targets may be associated with reduced potential environmental effects. The targets used by Regional Board staff as the basis for development of the recommended TMDLs are scientifically defensible, have been peer reviewed (consistent with the State Listing Policy), and will assure that the objective of the TMDLs to achieve water quality standards will be met. Alternative numeric targets recommended by certain stakeholders were rejected because they have not been peer reviewed and/or do not assure that the objective of the TMDLs will be met. TMDLs based on the stakeholders' recommended alternative numeric targets would therefore not likely be approved by the U.S. EPA.[3] Absent the adoption of recommended TMDLs by the state and their approval by the U.S. EPA, the Regional Board would be required to implement the established U.S. EPA TMDLs. The relative environmental effect of this alternative is discussed in "A", above.

E. A variety of permutations and combinations of tasks and schedules necessary to implement the TMDLs was considered, including: (1) withholding action on the TMDLs pending resolution of technical uncertainties; (2) specifying a longer compliance schedule in the implementation plan; (3) specifying a shorter (or no) compliance schedule in the implementation plan.

Withholding action to adopt the recommended TMDLs would require the Regional Board to implement the established U.S. EPA TMDLs. The environmental effect of this alternative is comparable to or greater than that of the recommended TMDLs (see discussion in "A", above).

Specifying a longer compliance schedule may allow resolution of technical uncertainties that might affect the stringency of and even need for TMDLs.

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[3] Cognizant of existing controversy regarding the appropriate numeric targets and the recommendations of certain stakeholders for alternative targets, USEPA staff (Cindy Lin) commented on Regional Board staff's proposed TMDLs and, specifically, the numeric targets, at the December 1, 2006 workshop. Ms. Lin stated that the proposed TMDLs "include the best available science, and that the numeric targets "are appropriate numeric values...they should achieve the TMDL goals". Separate discussions between Ms. Lin and Regional Board staff during the development of the proposed TMDLs confirmed USEPA's discomfort with the alternative target recommendations, since the alternatives recommended had not been subject to peer review and would not assure the protection of beneficial uses.

Less stringent TMDLs, or elimination of certain TMDLs, would likely result in reduced environmental effects since BMP implementation requirements would be reduced or eliminated. However, TMDLs with an extended compliance schedule are not likely to be approved by the U.S. EPA[4]. In that case, the Regional Board would be required to implement the established U.S. EPA TMDLs. The environmental effect of this alternative is comparable to or greater than that of the recommended TMDLs (see discussion in "A", above).

The potential environmental effects of an immediate compliance schedule or a schedule shorter than that proposed would likely be more severe, given that there would not be an allowance of time to consider appropriate control actions and to integrate them with control actions necessary to achieve other TMDLs and waste discharge requirements. The implementation plan recommended by Regional Board staff allows for integration of control measures to address multiple sources of impairment. This should reduce the overall environmental impact of multiple control measures implemented individually, and should provide more effective, timely and resource-efficient control of water quality standards impairment in the watershed.

The schedules identified in the recommended implementation plan provide a reasonable period for responsible parties to implement the tasks identified in the implementation plan, and to identify the need for modification of the TMDLs (and/or implementation plan). The recommended implementation plan allows stakeholders, including the Regional Board to address water quality standards problems in a coordinated and comprehensive manner that is expected to be more effective, timely, and resource-efficient. Further, the comprehensive and coordinated approach should reduce the cumulative environmental effects of independent implementation of control measures to meet separate permit and/or other TMDL requirements. The recommended implementation plan also provides stakeholder flexibility in identifying and implementing control measures that minimize environmental impacts and/or in providing requisite mitigation on a case-specific basis.

F. No environmentally superior, legally feasible alternative that meets the objective of the TMDLs to achieve water quality standards (as required by the Clean Water Act and implementing regulations) has been identified. The recommended TMDLs take a phased approach specifically intended to allow for further investigation, resolution of technical uncertainties and future refinement of the TMDLs as warranted. The effect of this approach, coupled with coordinated implementation of other TMDL/permit requirements, should

[4] USEPA staff (Cindy Lin) expressed concern with a compliance schedule that extends beyond that proposed in the TMDLs (December 31, 2015) in a telephone conversation with Regional Board staff on July 3, 2007.

be to minimize potentially significant adverse environmental impacts of the implementation of the TMDLs.

VII. Statement of Overriding Considerations

The potentially significant environmental impacts of the recommended organochlorine compounds TMDLs are listed in Section VI, above. Findings and mitigation measures that would lessen these environmental impacts, though likely not to levels of insignificance, are presented in Section V, above. These impacts/mitigation measures are also described in detail in the July 25, 2007 SED, Sections 5 and 6. The project benefits outweigh these environmental effects as follows:

A. Per the California Water Code, the recommended TMDLs include an implementation plan that specifies the actions that must be taken to achieve the TMDLs, with appropriate compliance schedules. Absent the recommended TMDLs and implementation plan, the Regional Board is required to implement the organochlorine compounds TMDLs established by the U.S. EPA in 2002, which do not include an implementation plan or compliance schedules. Since no schedules are specified in the U.S. EPA TMDLs, Regional Board permits issued to implement those TMDLs cannot legally provide compliance schedules: immediate compliance must be required. Implementation of the recommended TMDLs, relying on the accompanying implementation plan, rather than the U.S. EPA TMDLs, has the significant benefit of avoiding or reducing the following adverse effects:

    a. Regional Board requirements for immediate compliance pursuant to the U.S. EPA TMDLs would likely necessitate permit enforcement orders (e.g., cease and desist orders), which would take additional Regional Board staff resources to develop, justify and enforce. To the extent that Regional Board resources must be diverted in this manner, action on other pressing water quality issues would be delayed.
    b. Implementation of the U.S. EPA TMDLs without a defined and approved implementation plan would require application of Best Professional Judgment by the Regional Board to identify permit terms and conditions that implement the TMDLs, as well as other established and relevant regulations, e.g., the Sediment TMDL for the Newport Bay/San Diego Creek watershed. Application of Best Professional Judgment, rather than reliance on a well-defined and approved implementation plan, would likely result in increased time and effort in preparing and defending recommended permit limitations. This could have the effect of delaying needed actions to implement the TMDLs, and could divert the Regional Board and

Regional Board staff from work necessary to address other pressing water quality issues.

B. Implementation of the Board staff-recommended TMDLs, relying on the accompanying implementation plan, rather than the U.S. EPA TMDLs, also has the following significant benefit. The Board staff recommended TMDLs will be implemented in a phased manner, with a compliance schedule that provides time for control actions to be deployed and for review and revision of the TMDLs, if found necessary. Future refinement of the TMDLs may lead to a revised implementation plan that obviates the need for one or more control actions, with resultant reductions in potential adverse environmental effects and resource expenditures by the responsible dischargers. The Board staff recommended implementation plan also allows the watershed stakeholders to implement a coordinated and comprehensive strategy to address the requirements of the recommended TMDLs and other established TMDLs and/or permits. The net effect of the phased, coordinated and comprehensive implementation approach should be a reduction in the potential cumulative environmental effects of the implementation of control measures to respond to TMDLs/permits on an individual basis. Further, this approach should provide a timelier, more effective and more resource-efficient method of achieving and maintaining water quality standards. In contrast, implementation of the U.S. EPA TMDLs, which do not include an implementation plan or compliance schedule, would likely forego opportunities for coordinated and comprehensive control actions. This would result in less efficient and timely correction of existing water quality standards impairments in the subject waterbodies due to multiple pollutants, as well as greater resource expenditures and environmental effects associated with the implementation of control actions intended to address each source of impairment independently.

C. In the absence of the Board staff-recommended TMDLs (i.e., the No Project Alternative), implementation of the U.S. EPA organochlorine compounds TMDLs would be required. The adverse environmental impacts from the Board staff-recommended would be equivalent to or less severe than the impacts from the U.S. EPA TMDLs.

D. Assessments conducted by both Regional Board and State Board staff found that use of San Diego Creek and Upper and Lower Newport Bay by aquatic life, wildlife (including birds) and by fishermen is impaired or threatened by one or more organochlorine compounds as the result of bioaccumulation of these substances in animal tissue that may be consumed by wildlife predator species and/or humans. Implementation of the Board staff recommended organochlorine compounds TMDLs will correct this water quality standards impairment of the covered

waterbodies, thereby protecting public health and the biota. Implementation of the U.S. EPA organochlorine compounds TMDLs would likewise correct water quality standards impairment due to organochlorine compounds but would not provide for integrated, and therefore more efficient and timely, control of multiple pollutants causing water quality standards impairment in the waterbodies addressed by the TMDLs, with implementation plan, recommended by Board staff.