

***DRAFT***

***Substitute Environmental Document for Proposed Basin Plan  
Amendments***

***for the Newport Bay Copper (Cu) TMDLs***

***and Non-TMDL Action Plans***

***for Zinc, Mercury, Arsenic and Chromium***

Santa Ana Regional Water Quality Control Board

**August 30, 2016**

## **ACRONYMS**

ACOE – Army Corps of Engineers  
AFPs – antifouling paints  
BIOL - Preservation of biological habitats of special significance  
BMP – Best management practice  
BPA – Basin Plan Amendment  
BPTCP – Bay Protection and Toxics Cleanup Program  
cfs – cubic feet per second  
Caltrans – California Department of Transportation  
CASQA – California Stormwater Quality Association  
CCC – California Coastal Commission  
CEQA – California Environmental Quality Act  
COMM - Commercial and sportfishing  
CWA – Clean Water Act  
CTR – California Toxics Rule  
DOC – dissolved organic carbon  
DPR – Department of Pesticide Regulation  
EIR –Environmental Impact Report  
ERL –Effects range low (sediment guideline)  
EST - Estuarine habitat  
LA – Load allocation  
Metals As – Arsenic  
Cd – Cadmium  
Cu – Copper  
Hg – Mercury  
Pb – Lead  
Zn – Zinc  
MAR - Marine habitat  
NAV – Navigation  
ND – Negative Declaration  
NPDES –National Pollutant Discharge Elimination System  
OAL – Office of Administrative Law  
ppt – parts per thousand  
RARE - Rare, threatened, or endangered species  
REC1 - Water contact recreation  
REC2 - Non-contact water recreation  
SARWQCB – Santa Ana Regional Water Quality Control Board  
SED – Substitute environmental document  
SHEL =Shellfish harvesting  
SIP – State Implementation Plan  
SMW – State Mussel Watch  
SPWN - Spawning, reproduction, and development  
SSO – Site-specific objective  
SWAMP – Surface Water Ambient Monitoring Program  
SWRCB – State Water Resources Control Board (State Board)  
TEL – threshold effects level (sediment guideline)  
TMDL – Total maximum daily load

*Draft Substitute Environmental Document,  
Copper TMDLs and Action Plans for Zn, Hg, As and Cr in Newport Bay – August 30, 2016*

TOC – total organic carbon

TSO – Time schedule order

TSS – total suspended solids

$\mu\text{g}/\text{cm}^2/\text{d}$  – micrograms per centimeter<sup>2</sup> per day (leach rate)

USEPA – United States Environmental Protection Agency

USFWS – United States Fish and Wildlife Service

WILD - Wildlife habitat

WLA – Waste load allocation

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## **1.0 INTRODUCTION**

The California Regional Water Quality Control Board, Santa Ana Region (Regional Board) proposes to amend the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan; Santa Ana Regional Water Quality Control Board [SARWQCB] 2008) to incorporate Copper (Cu) Total Maximum Daily Loads (TMDLs) and Non-TMDL Action Plans (Action Plans) for Zinc (Zn), Mercury (Hg), Arsenic (As) and Chromium (Cr) for Newport Bay.

As described in detail in Section 1.1, the Regional Board is required to comply with the California Environmental Quality Act (CEQA) when considering amendments to the Basin Plan. Accordingly, this Substitute Environmental Document (SED), which includes an Environmental Checklist (Checklist) and analysis of the findings in the Checklist, has been prepared to address the potential environmental effects of adoption and implementation of the proposed Basin Plan amendments (the Proposed Project).

If the Basin Plan amendments are approved, Copper (Cu) TMDLs and Action Plans for Zn, Hg, As and Cr would be adopted and implemented. (See *Staff Report for Basin Plan Amendments for Copper TMDLs and Non-TMDL Action Plans for Zinc, Mercury, Arsenic and Chromium in Newport Bay, California, L.M. Candelaria 2016*). The Cu TMDLs and Action Plan for Zn would replace the Cu and Zn TMDLs promulgated by USEPA in June 2002. USEPA's TMDLs for Cadmium (Cd) and Lead (Pb) should be depromulgated based on the metals impairment assessment by Board staff. USEPA did not find impairment due to As and no TMDL for As was promulgated; but found impairment for Hg and Cr only in the Rhine Channel. However, Board staff's assessment indicates impairment due to these metals and Action Plans are now recommended. While USEPA's TMDLs do not include an implementation plan, actions are already required (and have been taken by the Regional Board and dischargers) to implement and achieve USEPA's TMDLs. This includes the issuance of National Pollutant Discharge Elimination System (NPDES) permits by the Regional Board for discharges of metals to surface waters. These permits specify discharge limitations and other requirements that are consistent with and appropriately implement USEPA's TMDLs. As stated, dischargers have implemented a variety of tasks and projects to address metals in the watershed in response to these permit requirements.

The proposed Cu TMDLs and Action Plans for Zn, Hg, As and Cr are described in detail in the Staff Report accompanying the Basin Plan amendment, and are summarized in the proposed draft Basin Plan amendment. The Staff Report, draft Basin Plan amendment and other relevant documentation can be found at the Regional Board's website at:

[http://www.waterboards.ca.gov/santaana/water\\_issues/programs/tmdl/tmdl\\_metals.shtml](http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/tmdl_metals.shtml).

A summary description of the Proposed Project is provided in Section 2 of this SED. Section 3 describes the environmental and regulatory setting for the Proposed Project. A discussion of reasonably foreseeable methods of compliance with the Cu TMDLs and Zn, Hg, As and Cr Action Plans, the Environmental Checklist and analysis of the findings in the Checklist are provided in Section 4. Section 5 includes a discussion of alternatives to the Proposed Project. References used in completing the analysis are listed in Section 6.

Based on the analysis of the findings in the Checklist, Regional Board staff concludes that the implementation of the reasonably foreseeable methods of compliance with the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans will have less than significant impacts on the environment since mitigation measures for potential impacts are available and can and should be implemented by local agencies as site-specific projects are implemented. The goal of the TMDLs and Action Plans is to improve and protect water quality and beneficial use conditions in the Newport Bay watershed.

### **1.1 REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS TO THE NEWPORT BAY WATERSHED BY THE BASIN PLAN AMENDMENT FOR THE COPPER TMDLS AND ZINC, MERCURY, ARSENIC AND CHROMIUM ACTION PLANS**

Pursuant to §15251(g) of the CEQA Guidelines (California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, §15000 *et seq.*), the Water Quality Control (Basin)/Section 208 Planning Program of the State and Regional Water Boards has been certified by the Secretary for Resources as exempt from the requirement to prepare an Environmental Impact Report (EIR), Negative Declaration (ND) or Initial Study. However, an environmental analysis is to be presented in a substitute document that includes at a minimum:

1. A description of the proposed activities; and,
2. Either (a) or (b):
  - (a) Alternatives to the activities and mitigation measures to avoid or reduce any significant or potentially significant effects that the proposed project may have on the environment; or,
  - (b) A statement that the proposed project would not have any significant or potentially significant effects on the environment, supported by a checklist or other documentation.<sup>1</sup>

Additionally, the Regional Board must comply with the State Water Resource Control Board's regulations for implementation of CEQA for exempt regulatory programs when amending basin plans (CCR, Title 23, § 3775-3781). These regulations require early public consultation (Section 1.1.1) and the completion of a Substitute Environmental Document (SED), consisting of a written report containing an environmental analysis of the project and a completed Environmental Checklist. The issues identified in the Environmental Checklist must be evaluated in the checklist or elsewhere in the SED. Other documentation may also be included.

The SED must include:

1. A brief description of the proposed project;

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<sup>1</sup> CEQA Guidelines, §15252.

2. Identification of any significant or potentially significant adverse environmental impacts of the proposed project;
3. An analysis of reasonable alternatives to the proposed project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts; and,
4. An environmental analysis of the reasonably foreseeable methods of compliance. This environmental analysis must include, at a minimum, all of the following:
  - a) an identification of the reasonably foreseeable methods of compliance with the project;
  - b) an analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;
  - c) an analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and,
  - d) an analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance.

In preparing the environmental analysis of reasonably foreseeable methods of compliance, the Regional Board may utilize numerical ranges or averages where specific data are not available; however, the Board is not required to engage in speculation or conjecture.

The environmental analysis must take into account a reasonable range of environmental, economic and technical factors, population and geographic areas and specific sites, but the Board is not required to conduct a site-specific project level analysis of the methods of compliance, which CEQA may otherwise require of those agencies who are responsible for complying with the revised Basin Plan when they determine the manner in which they will comply.

For each of the significant or potentially significant adverse environmental impacts of the project or reasonably foreseeable methods of compliance with the project that are identified (if any), the SED must contain findings as described in the CEQA Guidelines §15091, and, if applicable, a statement of overriding considerations as described in CEQA Guidelines §15093.

The environmental analysis for the Basin Plan amendments must also comply with §15187 of the CEQA Guidelines. Section 15187 establishes requirements for rules and regulations requiring the installation of pollution control equipment, establishment of performance standards<sup>2</sup>, and establishment of a treatment requirement by the State Water Resources Control Board (SWRCB or State Board) and regional water quality control boards (among other

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<sup>2</sup> The term “performance standard” is not defined in CEQA but in the rulemaking provisions of the Administrative Procedures Act (Government Code §11340-11359). A “performance standard” is a regulation that describes an objective with the criteria stated for achieving the objective (Government Code §11342(d))

agencies).<sup>3</sup> The requirements established in §15187 are mirrored in the State Water Resources Control Board's regulations. Specifically, pursuant to §15187, the environmental analysis for such a rule or regulation must include at least the following:

1. An analysis of reasonably foreseeable environmental impacts of the methods of compliance;
2. An analysis of reasonably foreseeable feasible mitigation measures relating to those impacts; and
3. An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation, which would avoid or eliminate the identified impacts.

Once again, the analysis must consider a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites. Where specific data are not available, the Santa Ana Water Board may utilize numerical ranges and averages but is neither required nor encouraged to engage in speculation or conjecture. A project-specific level analysis is not required, nor is it feasible.

Pursuant to Water Code §13360, the Santa Ana Water Board is prohibited from specifying the design, location, type of construction, or particular manner of compliance with waste discharge requirements or other orders. Instead, those entities subject to the proposed Basin Plan amendments are responsible for identifying compliance strategies, and conducting the required CEQA analysis of implementation of the selected strategies at the project-level. Thus, the Santa Ana Water Board cannot conduct project-level CEQA analyses of strategies that would be implemented by others, nor is it required to do so.

This document analyzes the potential environmental effects of implementing reasonably foreseeable methods of compliance on a Programmatic Level. Consistent with the CEQA Guidelines and Water Code Sections identified above, the environmental analysis contained herein includes a written analysis that identifies a reasonable range of reasonably foreseeable compliance strategies (Section 4), presents an Environmental Checklist and evaluates reasonably foreseeable environmental effects and mitigation measures, if applicable (Section 4), and discusses alternatives to the Proposed Project (Section 5). This analysis takes into consideration a reasonable range of environmental and economic factors, population and geographic areas and specific sites.

To fulfill the basic functions of CEQA (to evaluate and inform the public and decision-makers of the potential adverse environmental impacts of a project, identify suitable alternatives and mitigation measures and provide for public participation), a CEQA review does not need to be exhaustive, nor do the CEQA documents need to be perfect. They need only be adequate,

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<sup>3</sup> The proposed Basin Plan amendment involves the adoption of copper (Cu) TMDLs and Action Plans for Zn, Hg, As and Cr, including an implementation plan to achieve those TMDLs. As such, the TMDLs would be considered as establishing performance standards. Therefore this environmental analysis must comply with CEQA Section 15187.

complete, and good faith efforts at full disclosure (CEQA Guidelines, § 15151). Nor does a CEQA analysis require unanimity of opinion among experts. The analysis is satisfactory as long as those opinions are considered (CEQA Guidelines, §15151).

This draft SED is intended to satisfy the standards for adequacy delineated in the CEQA Guidelines as they appear in CCR Title 14 §15000 *et seq.* and applicable case law.

In this draft SED, the Regional Board staff has performed a good faith effort at full disclosure of the reasonably foreseeable environmental impacts that could accompany implementation of the reasonably foreseeable methods of compliance with the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans for Newport Bay.

The Regional Board has made this draft SED available to the public for comment along with the Staff Report and the proposed Basin Plan amendment. These documents will be considered as a whole when evaluating the environmental impacts of implementing the Cu TMDLs and Action Plans. When completed, this SED will also include a response to comments on the draft SED.

### **1.1.1 CEQA Scoping Meetings and Regional Board Presentation**

In accordance with the State Board's regulations for the implementation of CEQA (CCR Title 23, §3775.5), the Regional Board held two CEQA scoping meetings, on July 23, 2015 at the City of Newport Beach (City), to initiate public participation in the development of this draft SED. A notice of the CEQA Scoping hearing was sent to potentially interested and affected parties. An informational item was also presented at the July 24, 2015 Regional Board meeting. Input from all stakeholders and interested parties was solicited at these meetings and at the Regional Board meeting for consideration in the development of the draft SED.

During the CEQA Scoping meeting, Regional Board staff identified and discussed the regulatory basis for TMDLs, including applicable statutory and regulatory requirements; the metals TMDLs for Newport Bay promulgated by USEPA in 2002; and the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans. Board staff described a number of reasonably foreseeable methods of compliance with the TMDLs and Action Plans. These reasonably foreseeable compliance methods include actions to 1) decrease Cu discharges from boats, tributary runoff and storm drains; 2) remediate sediment Cu in marinas; 3) address sediment Zn and Hg, and Zn fish tissue impairment; and 4) address As and Cr fish tissue impairment.

## **2.0 PROJECT DESCRIPTION**

The Regional Board proposes to amend the Basin Plan to incorporate Copper (Cu) TMDLs and Action Plans for Zinc (Zn), Mercury (Hg), Arsenic (As) and Chromium (Cr) in Newport Bay. The goals of these TMDLs and Action Plans for Newport Bay are to correct impairment in waters due to Cu, in sediments due to Cu, Zn and Hg, and to address fish/mussel tissue impairment due to Zn, As and Cr.

The proposed Cu TMDLs and Action Plan for Zn would replace the Cu and Zn TMDLs promulgated by USEPA in June 2002. Action Plans, rather than TMDLs, are recommended for

Zn and Hg since the remediation of sediment Cu (required by the Cu TMDL) should also remediate sediment Zn and Hg; therefore, a TMDL is not warranted at this time. Action Plans, rather than TMDLs, are recommended for As and Cr since sources of As and Cr need to be characterized; therefore, allocations cannot be assigned at this time. The As and Cr implementation tasks include a source analysis study. Based on the results of the additional studies, subsequent regulatory action may include the development and implementation of future TMDL(s). It should be noted that USEPA did not promulgate a TMDL for As, and promulgated separate TMDLs for Hg and Cr only in the Rhine Channel, so the proposed Action Plans, if approved, would impose new requirements on responsible parties. *(Note that if the Cu TMDLs or Zn, Hg, As and Cr Action Plans are not adopted, then USEPA's TMDLs for Cu, Zn, Cd and Pb will remain in place and will need to be implemented. These TMDLs include higher reductions for Cu loads from boats (92% compared to 83% in the proposed Cu TMDLs), and include allocations for Zn, Cd and Pb that must be met. Board staff's Metals Impairment Assessment found no impairment for Cd and Pb, and Zn impairment that could be addressed by an Action Plan with Hg.)*

As noted above, actions are already required to implement and achieve USEPA's TMDLs. This includes the issuance of National Pollutant Discharge Elimination System (NPDES) permits by the Regional Board for discharges of metals to surface waters. These permits specify discharge limitations and other requirements that are consistent with and appropriately implement USEPA's TMDLs.

If the proposed TMDLs and Action Plans are approved and replace USEPA's corresponding TMDLs, as expected, USEPA's TMDLs for Cu and Zn will be depromulgated and will no longer apply for regulatory purposes. Actions already taken and underway to address impairment from metals, in response to USEPA's TMDLs, are expected to continue to be employed in implementation of the proposed TMDLs and Action Plans, once approved. The evaluation of the potential effects of adoption and implementation of the proposed TMDLs and Action Plans is conducted in this context in this SED.

The proposed Cu TMDLs include:

- (1) Numeric targets for Cu in water based on the California Toxics Rule (CTR) chronic and acute criteria;
- (2) Numeric targets for Cu in sediments based on the Effects Range Low (ERL) sediment guidelines;
- (3) Total Maximum Daily Loads (TMDLs) for Cu discharged into Newport Bay;
- (4) Wasteload and load allocations for point source and nonpoint source inputs of Cu to the Bay; and,
- (5) A recommended implementation plan (tasks and schedules) through which the numeric targets, TMDLs and allocations will be achieved.

The proposed Zn, Hg, As and Cr Action Plans include:

- (1) Numeric targets for Zn, Hg, As and Cr in water based on the California Toxics Rule (CTR) chronic and acute criteria;
- (2) Numeric targets for Zn, Hg, As and Cr in sediments based on the Effects Range Low (ERL) sediment guidelines;

- (3) Numeric targets for Zn, Hg, As and Cr in fish tissue based on guidelines for human health and wildlife; and
- (4) A recommended implementation plan (tasks and schedules) through which the numeric targets will be achieved;
- (5) The Action Plans for Zn, Hg, As and Cr do not contain TMDLs or allocations.

USEPA's Metals TMDLs (for Cu, Zn, Cadmium (Cd) and Lead (Pb)) do not include implementation plans. States are required by federal regulations to incorporate TMDLs into water quality management plans, which are intended to direct implementation (40 CFR 130.6). In California, water quality management plans include Regional Water Quality Control Plans (Basin Plans) and statewide water quality control plans. Under California law, a TMDL incorporated into the Basin Plan must include an implementation plan. The proposed amendments include the recommended implementation plan for the TMDLs and Action Plans and, thus, fulfill this obligation.

The proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans, including the implementation tasks and schedules, were developed through scientific and technical inquiry with USEPA, US Fish and Wildlife Service (USFWS), Orange County Coastkeeper and with input from stakeholders and other active participants, including environmental organizations. The proposed Cu TMDLs also included scientific and technical input from the US Navy, Department of Pesticide Regulation (DPR), and the Statewide Marina Workgroup (that includes State Board and other Regional Boards, the Port of San Diego, Orange County Coastkeeper, DPR, California Coastal Commission (CCC) and others). These efforts are documented in the Staff Report on the Regional Board's website:  
[http://www.waterboards.ca.gov/santaana/water\\_issues/programs/tmdl/tmdl\\_metals.shtml](http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/tmdl_metals.shtml).

The recommended implementation plans for the Cu TMDLs and Zn, Hg, As and Cr Action Plans are described in greater detail in Section 4. This Section includes a detailed discussion of the reasonably foreseeable methods of compliance, and the environmental analysis of the potential environmental effects of implementing these methods of compliance.

### **3.0 ENVIRONMENTAL AND REGULATORY SETTING**

#### **3.1 Environmental Setting**

The Newport Bay/San Diego Creek watershed is located in Central Orange County in the southwest corner of the Santa Ana River Basin, about 35 miles southeast of Los Angeles and 70 miles north of San Diego (Figure 1-1). The watershed encompasses 154 square miles and includes portions of the Cities of Newport Beach, Irvine, Laguna Hills, Lake Forest, Tustin, Orange, Santa Ana, and Costa Mesa. Mountains on three sides encircle the watershed; runoff from these mountains drains across the Tustin Plain and enters Upper Newport Bay via San Diego Creek. Newport Bay is a combination of two distinct water bodies - Lower and Upper Newport Bay, divided by the Pacific Coast Highway (PCH) Bridge. The Lower Bay, where the majority of commerce and recreational boating exists, is highly developed. The Upper Bay

contains both a diverse mix of development in its lower reach and an undeveloped ecological reserve to the north.<sup>4</sup>

San Diego Creek flows into Upper Newport Bay and is divided into two reaches. Reach 1 is located downstream of Jeffrey Road and Reach 2 lies upstream of Jeffrey Road to the headwaters. The San Diego Creek watershed (105 square miles) is divided into two main tributaries:

- Peters Canyon Wash, which drains Peters Canyon, Rattlesnake Canyon, and Hicks Canyon Washes that have their headwaters in the foothills of the Santa Ana Mountains, and
- San Diego Creek itself, which receives flows from Peters Canyon Wash in Reach 1 and includes Bee Canyon, Round Canyon, Marshburn Channel, Agua Chinon Wash, Borrego Canyon Wash and Serrano Creek

Important freshwater drainages to Upper Newport Bay, together covering 49 square miles, include the San Diego Creek, Santa Ana-Delhi Channel, Big Canyon Wash, Costa Mesa Channel and other local drainages.

San Diego Creek is the largest contributor (95%) of freshwater flow into Upper Newport Bay, followed by Santa Ana-Delhi Channel (~5%) (ACOE 2000). The table below summarizes the drainage areas of the major tributaries.

**Drainage Areas of the Newport Bay Watershed\***

<b>Tributary</b>	<b>Drainage Area (acres)</b>	<b>Drainage Area (%)</b>
San Diego Creek	47,300	48
Peters Canyon Wash	28,200	29
Santa Ana-Delhi	11,000	11
Other Drainage Areas	12,000	12

\*Table 1-2, USEPA's Toxics TMDLs, 2002

The hydrology of the watershed has been substantially altered over the past 150 years, first by agriculture and second by substantial urbanization. The watershed is currently comprised of approximately 68 percent urban, less than seven percent agriculture, while still maintaining a significant portion of open space, located mainly in the foothills and headland areas, based on the most recent land use data<sup>5</sup>. The most dramatic change to the watershed occurred when

<sup>4</sup>USEPA. Toxics TMDLs for San Diego Creek and Newport Bay, 2002.

<sup>5</sup> Source: Orange County Department of Public Works, provided May 2014.

San Diego Creek was channelized in the early 1960s. This caused the Creek to discharge directly into Upper Newport Bay.

### **Upper Newport Bay**

Upper Newport Bay contains one of the highest quality wetland areas remaining in Southern California. The Upper Bay estuary contains a State Ecological reserve in the upper half with habitat designated for sensitive species, including several endangered bird species including Ridgway's rail, the California least tern and Least Bell's vireo, and Belding's savannah sparrow (which is listed as endangered by the state). Several sediment basins are found in the Upper Bay and are periodically dredged by the Army Corps of Engineers (ACOE). The last sediment dredging and restoration project was conducted in 2005. The Upper Bay also contains the Newport Dunes Recreation area (Dunes), a small public beach which is the main swimming area in the Upper Bay. The Dunes area is located in the lower part of Upper Bay, south of the Ecological Reserve. North Star Beach is also located in the Upper Bay just south of the Ecological Reserve. The lower part of the Upper Bay also contains several marinas, including the Dunes and DeAnza marinas, which are located near the Dunes Recreation area and just north of Pacific Coast Highway bridge, respectively. Historical water uses for Upper Bay included water skiing, commercial and sport fishing (although limited fishing occurs presently), shellfish harvesting, preservation of rare species, marine habitat and recreation, including kayaking, boating and bird watching.

### **Lower Newport Bay**

The Lower Newport Bay area, including Lido and Balboa Islands, is highly urbanized and residential. The Lower Bay also includes a number of marinas and mooring areas that contain approximately 10,000 boats, and approximately 5 boatyards. The Rhine Channel, a small dead-end reach in the southwestern part of Lower Bay, is an isolated area with poor tidal flushing and minimal storm drain input. The Regional Board has identified Rhine Channel as a toxic hotspot based on previous investigations (BPTCP 1997). West Newport Bay and the Turning Basin area are also areas that tend to have low tidal flushing and tend to accumulate pollutants in waters and sediments. The entire Newport Bay up to the mouth of San Diego Creek is subject to tidal influence.

The climate is characterized by short, mild winters, and warm dry summers. Average rainfall is approximately 13 inches per year. Ninety percent (90%) of annual rainfall occurs between November and April, with minor precipitation during summer months. From 2006 to 2011, San Diego Creek had a mean base flow rate of less than 10 cubic feet per second (cfs) for flows less than 25 cfs (mean of 8.4 cfs). This is a decrease from the mean base flow rate of 12 cfs for 1994 to 2002, reported in the Toxics TMDL. For storm events, flows may be as high as 8000 cfs. San Diego Creek is mostly freshwater with a wide range of hardness values and small influences by the slightly saline water table (less than 1 or 2% salinity). Santa Ana Delhi had a mean base flow rate of less than 5 cfs for flows less than 25 cfs (mean of 3.2 cfs) for 2006 to 2011, with storm flows almost to 500 cfs. The Upper Bay is an estuary with mostly saline water during dry weather, and heavy freshwater inflow from San Diego Creek and Santa Ana-Delhi Channel during major storms, which mostly occur in winter. Lower Bay waters are dominated by saline waters (30 to 35 parts per thousand (ppt)) due to twice-daily ocean tides which enter the Bay via the jetty entrance.

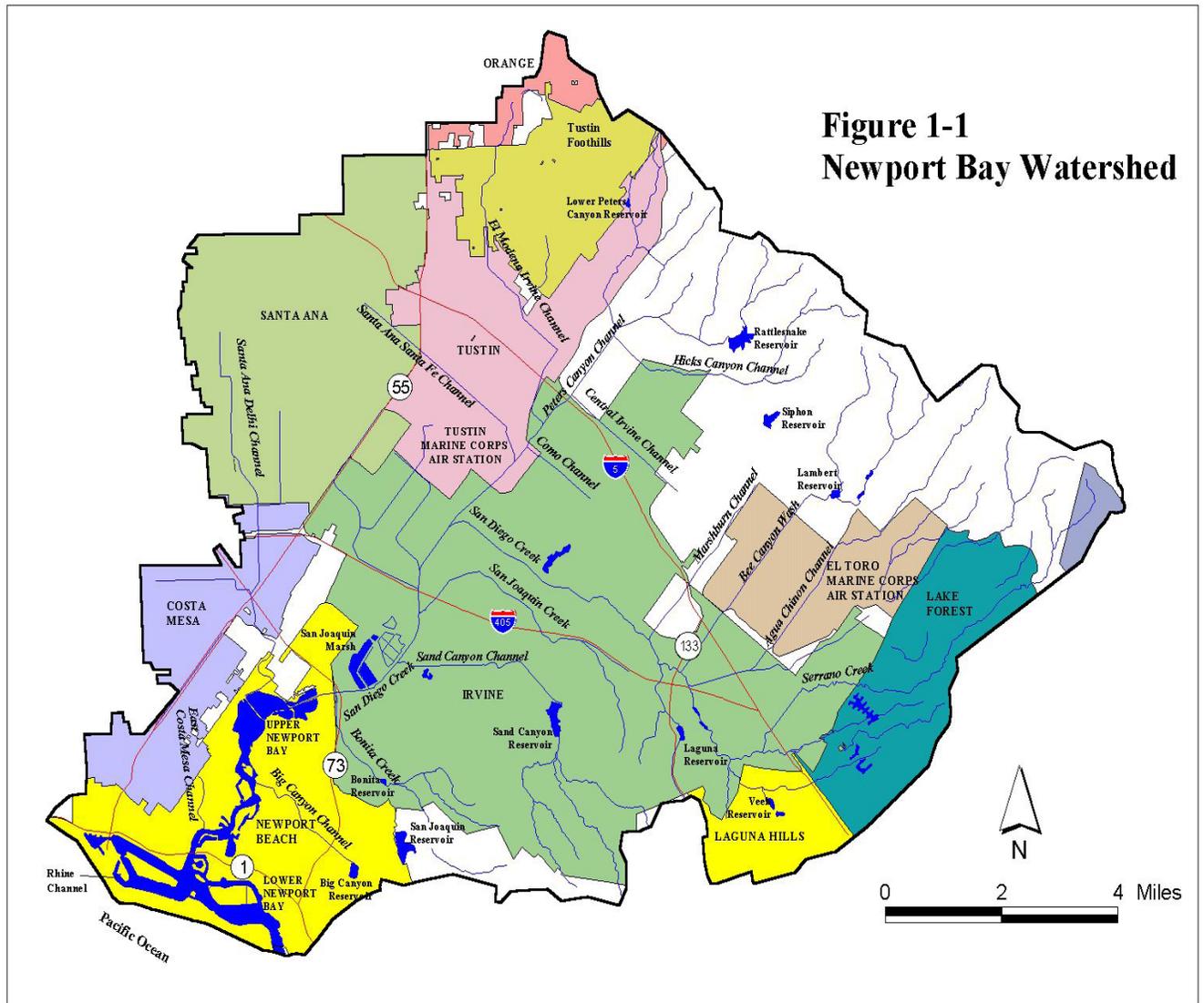
The actions identified in the recommended Copper (Cu) TMDL Implementation Plan and Zinc (Zn), Mercury (Hg), Arsenic (As) and Chromium (Cr) Action Plans and are intended to reduce Cu in Bay waters and sediments, Zn and Hg in sediments (and Zn in fish tissue), and As and Cr concentrations in fish tissue, and protect the beneficial uses of the Bay (Figure 1-1). The existing or potential beneficial uses of surface waters in the Newport Bay watershed that may be affected by metals are designated in the Regional Board's Basin Plan and are shown in the table below.

A more detailed description of the watershed is provided in the Staff Report (Sections 1.1 and 1.2).

**Beneficial Uses of Upper and Lower Newport Bay**

	NAV	REC1	REC2	COMM	BIOL	WILD	RARE	SPWN	MAR	SHELL	EST
Upper Newport Bay		X	X	X	X	X	X	X	X	X	X
Lower Newport Bay*	X	X	X	X		X	X	X	X	X	

X = Existing or potential beneficial use, I = Intermittent beneficial use, \* Includes the Rhine Channel  
 NAV =Navigation, REC1 =Water contact recreation, REC2 =Non-contact water recreation,  
 COMM =Commercial and sportfishing, BIOL =Preservation of biological habitats of special significance,  
 WILD =Wildlife habitat, RARE =Rare, threatened, or endangered species,  
 SPWN =Spawning, reproduction, and development, MAR =Marine habitat,  
 SHEL =Shellfish harvesting, EST =Estuarine habitat



### 3.2. Regulatory Setting

Under Section 303(d) of the federal Clean Water Act (CWA) states are required to develop lists of impaired surface waters. These are waters for which technology-based regulations and other required controls are not stringent enough to meet the water quality standards set by states. Water quality standards include water quality objectives, designated beneficial uses to which the surface waters are or may be put, and an antidegradation policy.

The Basin Plan specifies the water quality standards applicable to surface (and ground) waters in the Santa Ana Region. The requirement for an antidegradation policy is satisfied by State Board Resolution No. 68-16<sup>6</sup>, which is incorporated in the Basin Plan by reference.

The Clean Water Act requires that states establish priority rankings for waters on the 303(d) lists and develop Total Maximum Daily Loads (TMDLs) for these waters. A TMDL is the maximum amount of a pollutant, such as Cu, that a water body can receive and still safely meet water quality standards. In addition, USEPA recently identified a new framework for implementing the CWA 303(d) program that allows states to identify and implement alternatives to TMDLs that are expected to achieve the same or better water quality results in a more efficient and expeditious manner<sup>7</sup>. The Action Plans identified by Board staff for Zn, Hg, As and Cr are alternative strategies to TMDLs.

USEPA has oversight authority for the 303(d) program and is required to review, and approve or disapprove TMDLs submitted by states. If USEPA disapproves a TMDL submitted by a state, USEPA is required to instead establish the TMDL for that water body.

The elements of TMDLs are described in federal law and regulations (CWA Sec. 303(d) and 40 CFR §§ 130.2; 130.7). TMDLs must include seasonal variations in water quality and a margin of safety (MOS) to account for uncertainty in predicting how well pollutant reductions will result in meeting water quality standards. TMDLs must also allocate total allowable loads to point sources (e.g., discharges subjected to regulation under the NPDES program) and nonpoint sources (other sources, including anthropogenic and natural background discharges). Wasteload allocations (WLAs) are assigned to point sources and load allocations (LAs) are assigned to nonpoint sources.

TMDLs are generally established in California through the basin planning process, (i.e., an amendment to the basin plan is adopted by the Regional Board that incorporates the TMDL(s) along with a new or revised program of implementation designed to meet the TMDL(s)).

On October 31, 1997, USEPA entered into a consent decree (decree), (*Defend the Bay, Inc. v. Marcus, (N.D. Cal. No. C 97-3997 MMC)*), which established a schedule for development of TMDLs in San Diego Creek and Newport Bay. The decree required development of TMDLs for multiple toxic pollutants by January 15, 2002. The agreement also provided that USEPA would establish the required TMDLs within ninety (90) days if the State failed to establish approved TMDLs by the deadline. In early April 2002, the decree was modified to extend the deadline for USEPA to establish these TMDLs to June 15, 2002 (USEPA 2002).

<sup>6</sup> [http://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/1968/rs68\\_016.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf)

<sup>7</sup> "A New Long-Term Vision for Assessment, Restoration and Protection under the Clean Water Act Section 303(d) Program", USEPA, December 5, 2013.

Relying in part on work completed by Regional Board staff, in June 2002, USEPA established the Toxics TMDLs for San Diego Creek and Newport Bay (including TMDLs for Cu and other metals) in compliance with the terms of the decree. The TMDLs were designed to attain the water quality objectives<sup>8</sup> for Cu, Cd, Zn and Pb, and other specified toxic pollutants in the Newport Bay, and were prepared pursuant to state and federal requirements to attain water quality standards. Although the technical portion of the TMDLs was adopted, an implementation plan was not developed as implementation plans are the responsibility of the state.

The proposed project is the adoption and implementation of multiple Basin Plan amendments to incorporate: *(1) Cu TMDLs for Newport Bay; (2) Zn, Hg, As and Cr Action Plans for Newport Bay; and (3) implementation tasks and schedules to meet the numeric targets and allocations for Cu, and the numeric targets for Zn, Hg, As and Cr.*

Upon approval by the State Board and Office of Administrative Law (OAL) of the proposed Basin Plan amendments, the amendments will be forwarded to USEPA for review and approval. If USEPA approves the State-approved Cu TMDLs and Zn, Hg, As and Cr Action Plans, the revised Cu TMDLs and Zn Action Plan will replace USEPA's Cu TMDLs. In addition, it is expected that USEPA will depromulgate the Zn, Cd and Pb TMDLs for Newport Bay based on the Metals Impairment Assessment conducted by Board staff (Staff Report, Section 4.0).

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<sup>8</sup> USEPA's Toxics TMDLs establishes numeric targets, load allocations, and waste load allocations for Cu, Cd, Zn and Pb based on the saltwater California Toxics Rule (CTR) acute and chronic criteria. (USEPA's Toxics TMDLs also established numeric targets for Cu, Cd, Zn and Pb for San Diego Creek based on flow tiers.)

#### 4.0 ENVIRONMENTAL IMPACT ANALYSIS

This section presents the Environmental Checklist, identifying the potential adverse environmental impacts of implementing the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans. This Checklist is based on consideration of the potential impacts of the reasonably foreseeable methods of compliance with the TMDLs, described in Section 4.1. Analysis of the Checklist findings, and Regional Board staff's conclusions regarding the level of potential environmental impact, are presented in Section 4. 2.

#### 4.1 Implementation Plans for Cu TMDLs and Zn, Hg, As and Cr Action Plans

*Revised Cu TMDLs and Action Plans for Zn, Hg, As and Cr are proposed as Basin Plan Amendments. Action Plans, rather than TMDLs, are recommended for Zn and Hg since the remediation of sediment Cu (required by the Cu TMDL) should also remediate sediment Zn and Hg; therefore, a TMDL is not warranted at this time. Action Plans, rather than TMDLs, are recommended for As and Cr since sources of As and Cr need to be characterized; therefore, allocations cannot be assigned at this time. (Note that if the Cu TMDLs or Zn, Hg, As and Cr Action Plans are not adopted, then USEPA's TMDLs for Cu, Zn, Cd and Pb will remain in place and will need to be implemented. These TMDLs include higher reductions for Cu loads from boats (92% compared to 83% in the proposed Cu TMDLs), and include allocations for Zn, Cd and Pb that must be met. Board staff's Metals Impairment Assessment found no impairment for Cd and Pb, and sediment Zn impairment that could be addressed by an Action Plan (and remediation required by the Cu TMDLs.)*

##### 4.1.1 Implementation of Cu TMDLs - Required Tasks and Reasonably Foreseeable Methods of Compliance

###### 4.1.1.1 Reduce Copper Loads from Copper Antifouling Paints (Cu AFPs) on Recreational and Commercial Boats

Since Cu antifouling paints (AFPs) are the largest source of Cu to Newport Bay, the highest priority for the Cu TMDLs is the reduction of Cu loads from Cu AFPs. An approximately 83% reduction in Cu discharges from Cu AFPs is required to meet the TMDL allocation assigned to boats.<sup>9</sup> The main strategy to accomplish this Cu load reduction from boats is the conversion of boats from Cu AFPs to nontoxic AFPs/coatings. In addition, while boats are being converted to nontoxic AFPs/coatings, all divers must be required to use BMPs for underwater hull cleaning including the use of soft cloths or hull cleaning container/filter methods. As described below, compliance with the TMDL boat allocation will likely require a combination of these strategies, implemented over time (Staff Report, Section 5.6.3.1.2).

The proposed TMDL implementation plan requires dischargers, including the City of Newport Beach, the County of Orange, marina and boatyard owners/operators, underwater hull cleaners and individual boat owners to prepare and submit one or more proposed implementation plans and schedules to address the reduction of Cu loads from boats, and to determine the effectiveness of the plans when implemented. The plan(s) would be implemented upon approval by the Regional Board. The dischargers are encouraged to work collaboratively to develop a

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<sup>9</sup> Note that USEPA's TMDLs require a 92% reduction in Cu loads from boats, which is higher than the reduction required by the proposed Cu TMDLs.

comprehensive plan(s) for resource efficiency, effectiveness and timeliness. The City of Newport Beach and County of Orange are encouraged to take a leadership role in the preparation and implementation of these plans.

(1) Convert boats from Cu AFPs to nontoxic AFPs.

*The attainment of these Cu TMDLs will require the conversion of boats from Cu to nontoxic AFPs/coatings. This conversion is both reasonable and possible since several studies on alternative paints have demonstrated that nontoxic AFPs or coatings are available and cost effective compared to traditional Cu AFPs. Time will be needed to implement the conversion from Cu to nontoxic AFPs and to evaluate and implement other measures to reduce Cu discharges from boats; therefore, Cu AFPs may be replaced during the regular repainting schedule so boaters will not be required to convert to nontoxic paints immediately. In addition, in the interim (until the final date of compliance with the Cu TMDLs), some boaters may convert to non-Cu AFPs or Cu AFPs with leach rates at or below DPR's maximum allowable leach rate of  $9.5\mu\text{g}/\text{cm}^2/\text{d}$ .*

*Economics. There will be an initial cost to convert from Cu to nontoxic AFPs since the old Cu AFPs must be stripped before the application of a nontoxic paint. In addition, nontoxic paints must be sprayed on rather than rolled-on (like Cu), so nontoxic paints cost approximately double to apply. The long term cost of nontoxic paints, however, is equivalent to or lower than the cost of Cu paints since nontoxic paints last 5-7 years while Cu paints last 2-3 years.*

*Note that paint manufacturers are developing nontoxic formulas that can be rolled on rather than sprayed on, and/or applied over old Cu AFPs; these formula modifications will reduce the cost of the initial application of a nontoxic paint. Note also that a 319h Boat Conversion Project was conducted in a target marina in the Bay, but only ten boats took advantage of this incentive program.*

*Again, as described above, pursuant to the 2002 USEPA Cu TMDLs, a substantial reduction in Cu loads from boats is already required (92%); while the Cu load reduction for boats identified in the proposed Cu TMDLs (83%) is less than required by USEPA's TMDLs.*

(2) Use of BMPs for hull cleaning including soft cloths or hull cleaning container/filter methods.

*BMPs for hull cleaning. As boats are converted to nontoxic AFPs, all underwater hull cleaners should use BMPs for hull cleaning. A hull cleaning study by the US Navy showed that Cu loads for non-BMPs were approximately 28% higher than loads using BMPs for two test paints (Earley et al. 2013<sup>10</sup>). (Non-BMPs use abrasive pads to clean boat hulls, while BMPs use soft pads. If it is assumed that half the hull cleaners currently use BMPs and half use non-BMPs, then approximately 14% reduction in Cu loading may be achieved if all divers use BMPs.)*

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<sup>10</sup> Earley, P.J., B.L. Swope, K. Barbeau, R. Bundy, J.A. McDonald and I. Rivera-Duarte. 2013. Life cycle contributions of copper from vessel painting and maintenance activities. Biofouling.

*While the conversion from non-BMPs to BMPs will not be sufficient by itself to achieve these Cu TMDLs, it is reasonable and appropriate to require the consistent use of BMPs throughout the Bay to minimize the discharge of Cu to surface waters during hull cleaning. BMP training and requirements for BMP use are expected to be part of any strategy proposed by responsible parties to achieve the requisite Cu reductions from Cu AFPs.*

*The use of BMPs would also be required to achieve USEPA's Cu TMDLs and to reduce the discharge of pollutants to surface waters, consistent with the goal of the federal Clean Water Act.*

*Economics. Soft cloths. The conversion from the use of non-BMPs to BMPs should have no substantial cost increase.*

*Hull cleaning container/filter methods. A new BMP strategy for cleaning hulls consists of a container/filter method where a boat is cleaned inside a slip liner. The water is then filtered before discharging to the Bay, and the solids are collected and disposed of in an appropriate landfill. The result is that no Cu load (dissolved, total or particulate) from hull cleaning is discharged into the Bay. This results in cleaner waters and sediments.*

*Economics. The use of a container/filter system will cost approximately double that of a routine hull cleaning by a diver; however, the removal of Cu loads discharged during hull cleaning from Bay waters will help to clean up the Bay, and may reduce the number of boat conversions from Cu to nontoxic paints required to meet the Cu TMDLs. In addition, local divers may be trained to use this container/filter system so that they can protect Bay waters and continue to clean hulls.*

*(3) Continue monitoring in marinas, channels and Bay waters*

*Marinas, channels and open water sites in Newport Bay shall be monitored for dissolved and total Cu concentrations in water and sediment, and water and sediment toxicity; and the data evaluated to determine Cu load reduction and the effects of the reduced Cu load from Cu AFPs on Cu concentrations and Cu loading in marina and channel waters and sediments. Monitoring shall include dissolved and total Cu concentrations in water and sediment; water and sediment toxicity testing; water quality parameters including dissolved organic carbon (DOC), pH, salinity, temperature, total suspended solids (TSS), total organic carbon (TOC); and benthic testing (if necessary).*

*Economics. Marina monitoring should be incorporated into routine monitoring of the Bay, and include the same parameters that are monitored for other sites. Such monitoring would also be necessary to assess compliance with USEPA's already established TMDLs.*

*(4) Continue Education Programs for boaters, and boatyard and marina owner/operators and staff.*

*Identify and evaluate existing boater and boat related education program(s) in the Bay, and revise those programs as necessary to include the following at a minimum:*

- (5.1) *Cu water quality issues and TMDL requirements,*
- (5.2) *Information on transitioning from Cu to nontoxic AFPs including costs, availability and efficacy of nontoxic AFPs/coatings; conversion costs from Cu to nontoxic AFPs; application and maintenance costs; and hull cleaning costs;*
- (5.3) *Nontoxic AFP use requirements including recommended BMPs for hull cleaning and frequency of cleaning;*
- (5.4) *BMP requirements for all underwater hull cleaners including soft cloths or hull cleaning containment methods, and BMP requirements for boatyards<sup>11</sup>.*
- (5.5) *Conditions and requirements instituted by the State Lands Commission, the City of Newport Beach and Orange County to reduce Cu AFP discharges to achieve TMDL requirements by responsible parties (e.g. new conditions in marina lease agreements and marina slip agreements; hull cleaning permits or licenses that include BMP requirements); and*
- (5.6) *Potential boat storage options, such as dry dock and/or slip liners.*

*Economics. Education programs will be an additional cost; however, the benefits to water quality in the Bay will outweigh these initial costs. Education programs were already begun in the Bay as part of the 319(h) Cu Reduction Program<sup>12</sup> conducted (mostly in Balboa Yacht Basin) in fall 2010 through winter 2013. In addition, a City resolution was passed “to encourage the use of copper-free boat bottom paints” (Resolution 2010-53).*

#### *4.1.1.2 Remediate areas of known sediment Cu impairment, and identify/remediate sediment impairment in areas where no or limited sediment Cu data exists*

*Areas impaired for sediment Cu are mostly marinas that were characterized in the Cu-Metals Marina Study (Coastkeeper & Candelaria 2007). The second priority of the implementation plan for the proposed Cu TMDLs is to remediate areas of known sediment Cu impairment; and to evaluate areas where no or limited sediment data exists, especially marina areas, to determine the extent of impairment in non-characterized areas of the Bay. A more extensive marina survey is indicated to fully assess the extent of sediment Cu exceedances and sediment toxicity in marina and boatyard areas in the Bay. Corrective actions required in the Cu TMDLs to address Cu sediment impairment, such as dredging, are also expected to remediate sediment impairment due to zinc (Zn) and mercury (Hg) (Staff Report, Section 5.6.3.2).*

*The proposed TMDL implementation plan requires dischargers, including the City of Newport Beach, the County of Orange, marina and boatyard owners/operators, underwater hull cleaners and individual boat owners to prepare and submit one or more proposed implementation plans and schedules to address known areas of sediment impairment, and to determine sediment impairment in areas of the Bay with no or limited sediment data. The plan(s) would be implemented upon approval by the Regional Board. The dischargers are encouraged to work*

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<sup>11</sup> Boatyard operations are regulated under the State Board's General Industrial Storm Water Permit, which requires the development and implementation of Storm Water Pollution Prevention Plans and prohibits the discharge of unauthorized non-storm water discharges (zero discharge), such as process wastewater generated at boatyards. In short, BMPs are already required at boatyard facilities.

<sup>12</sup> Orange County Coastkeeper. March 2013. Newport Bay Copper Reduction Study. Report for Santa Ana Regional Water Board.

collaboratively to develop a comprehensive plan(s) as a matter of resource efficiency, effectiveness and timeliness. The City of Newport Beach and County of Orange are encouraged to take a leadership role in the preparation and implementation of these plans.

*Economics.* A characterization study of marinas not evaluated in the Cu-Metals Marina Study (Coastkeeper & Candelaria 2007<sup>13</sup>) should be conducted to determine the impairment in marinas in the Bay. This study will be an additional cost. Dredging operations will entail cost. To the extent feasible, these dredging operations may be planned to coincide with dredging operations designed to address shallow depths and navigation issues.

#### 4.1.1.3 Meet Copper (Cu) allocations for tributary runoff

The third priority of the implementation plan for the proposed Cu TMDLs is to meet the Cu allocations for tributary runoff. The source analysis shows that discharges of Cu from major tributaries (storm and dry weather runoff) are the second largest source of Cu to Newport Bay (Staff Report, Section 5.6.3.3). The allocation for tributary runoff is equivalent to the Cu load in tributary runoff at the writing of the Cu TMDLs. (Metal loads from San Diego Creek have already been reduced with the implementation of the Sediment TMDLs, and are not expected to decrease further.) While San Diego Creek is no longer 303(d) listed for metals, including Cu, the Creek and Santa Ana Delhi are sources of Cu to Newport Bay. The dischargers will be required to continue monitoring to ensure that Cu loads from tributary runoff remain at or below the Cu allocations in this TMDL. Monitoring of metals is already being conducted.

*Economics.* Since metals monitoring is already being conducted, there should be no significant economic impact, unless Cu loads from tributaries exceed the Cu allocations for tributaries and corrective actions are necessary.

#### 4.1.1.4 Evaluate Copper (Cu) Discharges from Storm Drains for Local Impacts

The source analysis showed that discharges of Cu from storm drains are low compared to the largest sources of Cu (Cu from Cu AFPs on boats, and tributary runoff) (Staff Report, Section 5.6.3.4). While the overall Cu input from storm drains may be small compared to other sources, Cu loads may have local impacts in receiving waters near the larger storm drains, such as the Arches drains.

Pursuant to this proposed TMDL implementation plan, the City of Newport Beach and the County of Orange are required to develop and implement upon Regional Board approval a plan and schedule to determine the significance of localized Cu loads in runoff from storm drains that directly enter Upper and Lower Newport Bay. The intent is to assess the effects of Cu in storm drain runoff on local receiving waters and sediment quality and beneficial uses. Requirements for this investigation and for the development and implementation of a corrective action plan, where found to be necessary, will be incorporated in the revised MS4 permit. Corrective action to reduce Cu discharges and eliminate Cu impairment will be required where the data demonstrate impairment based on the criteria identified in the State Water Board's 303(d) Listing Policy (Water Quality Control Policy for developing California's Clean Water Act Section 303(d) List).

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<sup>13</sup> Orange County Coastkeeper and L.M.Candelaria. July 2007. Lower Newport Bay Copper-Metals Marina Study. Report for Santa Ana Regional Water Board.

*Economics. There will be costs involved in executing the requisite evaluation of local impacts of Cu in storm drain runoff. Additional costs may be incurred if corrective actions are shown to be necessary. It is our understanding that the City is already working on diversions of some storm drains in dry weather.*

#### 4.1.1.5 Continue Monitoring

*Monitoring is necessary to evaluate the effects of the strategies implemented in response to the Cu TMDLs and to determine progress towards achieving water quality standards; therefore, it is a key element of this TMDL implementation plan.*

*Monitoring for Cu and other metals in the Bay and its tributaries is conducted by the dischargers on a routine basis, largely in response to the requirements of the MS4 permit. The proposed implementation plan requires the dischargers to develop and implement, upon Regional Board approval, a monitoring plan to address the needs of this TMDL. The expectations for this monitoring are identified in the Staff Report (Section 5.6.3.5.). In brief, this plan should include the monitoring of Cu in water and sediments, toxicity in water and sediments, and benthic testing in sediments if sediment Cu exceeds guidelines and toxicity is present. The proposed plan should include sampling of the following:*

- *Bay waters and sediments, including open bay, marina and channel sites*
- *Tributary runoff including San Diego Creek, Santa Ana Delhi and Big Canyon Wash*
- *Storm drain runoff*

*The proposed monitoring plan should be integrated with ongoing monitoring to the extent feasible. Monitoring of storm drains that empty directly into the Bay should be coordinated with monitoring of marinas, channels, open water sites and tributaries. The monitoring plan shall include the following analyses at a minimum:*

- (1) *Bay monitoring in Upper and Lower Newport Bay.*
  - *Bay waters. Monitoring of dissolved and total copper (Cu) in water, and standard water quality parameters including pH, salinity, temperature, total suspended solids (TSS), dissolved organic carbon (DOC), total organic carbon (TOC); and toxicity testing.*
  - *Bay sediments. Monitoring of total Cu in sediments; pH and total organic carbon (TOC); and toxicity testing. If sediment toxicity is high, benthic monitoring should be conducted.*
  - *Bay monitoring shall include marina sites, as well as channel sites for both water and sediment testing as described above.*
- (2) *Tributary monitoring in San Diego Creek, Santa Ana Delhi, Big Canyon Wash.*
  - *Tributary waters. Monitoring of dissolved and total Cu in water, and standard water quality parameters including pH, salinity, temperature, total suspended solids (TSS), dissolved organic carbon (DOC), total organic carbon (TOC); and toxicity testing in runoff from the major tributaries, San Diego Creek and Santa Ana Delhi and Big Canyon Wash.*
- (3) *Storm drain monitoring.*
  - *Runoff from storm drains in Lower Newport Bay, including storm drains that empty into marinas, should also be monitored for dissolved and total Cu in water, and standard*

*water quality parameters including pH, salinity, temperature, total suspended solids (TSS), dissolved organic carbon (DOC) and total organic carbon (TOC).*

*(4) Fish/Shellfish tissue monitoring.*

- *Monitoring of Cu shall continue in fish and mussel tissue, especially since State Mussel Watch (SMW) data shows an increasing trend in Cu concentrations in mussels over the last ten years (Stillway et al. 2012, SWAMP Report<sup>14</sup>).*

*In addition, the proposed monitoring program must include a plan to evaluate the efficacy of the implementation tasks required to achieve the Cu load reductions required by this TMDL. The results of this monitoring are expected to support adaptive management of tasks and strategies to ensure efficient and effective implementation of the Cu TMDLs. Special studies may also be conducted to achieve the requirements of the Cu TMDLs.*

*Economics. A large part of the above recommended monitoring is already being conducted by the County of Orange. Additional monitoring, if required, could be added to this monitoring program. Integration of this monitoring with already established and ongoing monitoring programs is expected to reduce costs.*

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<sup>14</sup> Stillway, M., D. Markiewicz, B. Anderson, and B. Phillips. 2012. Toxicity in California Waters: Santa Ana Region. Report for Surface Water Ambient Monitoring Program (SWAMP)

#### **4.1.2 Implementation of Zn, Hg, As and Cr Action Plans - Required Tasks and Reasonably Foreseeable Methods of Compliance**

##### *4.1.2.1 Zn and Hg Action Plans*

*(1) Remediate areas of known sediment Zn and Hg impairment, and identify/remediate sediment impairment in areas where no or limited sediment Zn and Hg data exists*

*Areas impaired for sediment Zn and Hg are mostly marinas that were characterized in the Cu-Metals Marina Study (Coastkeeper & Candelaria 2007). The highest priority for the Zn and Hg Action Plans is to remediate areas of known sediment Zn and Hg impairment; and to evaluate areas where no or limited sediment data exists, especially marina areas, to determine the extent of impairment in non-characterized areas of the Bay. A more extensive marina survey is indicated to fully assess the extent of sediment Zn and Hg exceedances and sediment toxicity in marina and boatyard areas in the Bay. Corrective actions required in the Cu TMDLs to address Cu sediment impairment, such as dredging, are also expected to remediate sediment impairment due to zinc (Zn) and mercury (Hg).*

*The proposed TMDL implementation plan requires dischargers, including the City of Newport Beach, the County of Orange, marina and boatyard owners/operators, underwater hull cleaners and individual boat owners to prepare and submit one or more proposed implementation plans and schedules to address known areas of sediment impairment, and to determine sediment impairment in areas of the Bay with no or limited sediment data. The plan(s) would be implemented upon approval by the Regional Board. The dischargers are encouraged to work collaboratively to develop a comprehensive plan(s) as a matter of resource efficiency, effectiveness and timeliness. The City of Newport Beach and County of Orange are encouraged to take a leadership role in the preparation and implementation of these plans.*

*Economics. There will be costs associated with monitoring, characterization and dredging or implementation of other remediation strategies, where found necessary. The Cu TMDLs require that a characterization study of marinas not evaluated in the Cu-Metals Marina Study (Coastkeeper & Candelaria 2007) be conducted to determine the impairment in marinas in the Bay. The evaluation of other metals can be easily added to this study so that Zn and Hg will be characterized along with Cu. The costs of additional analyses should not be significant.*

*(2) Continued Monitoring*

- Monitoring of Zn, Hg (and Cu) should continue in both water and sediments (especially in the Lower Bay marina areas and the Turning Basin/S. Lido Channel areas), and tributary runoff, and Zn and Hg loads should be determined annually from tributary runoff.*
- Monitoring of Zn should continue in fish and mussels in the Lower Bay.*

*(3) Additional characterization studies*

- A Metals Sediment Study in the Lower Bay also determined concentrations of Zn, Hg (and Cu) in post-dredge surface sediments. Further work is needed to determine the extent of Zn, Hg (and Cu) in surface sediments throughout all of the Lower Newport Bay.*
- Sediments near boatyards should be tested to determine whether Zn, Hg (and Cu) exceed the ERM sediment guidelines and sediment toxicity is present. (This can be combined with marina study described above.)*

- A study to quantify the contribution of Zn discharges from Zn anodes and Zn boat paints should be conducted. (This should include the quantification of Zn released from Zn anodes (dissolved and particulate), and a determination of the dissolution rates of Zn from Zn anodes.)
- Total Zn and Hg data from the Storm Drain Study should be analyzed to determine total Zn loads from storm drains in the Turning Basin area (dissolved loads were calculated for the study report).
- A hydrodynamic flow model should be reviewed to determine whether loads from the tributaries impact the Turning Basin.

#### Remediation Strategies

- Based on the monitoring and characterization studies identified above, the proposed Action Plan must identify appropriate remediation strategies, such as dredging. Strategies should be included for the Turning Basin area in Lower Newport Bay, including marinas, to remediate sediment Zn, Hg (and Cu). Additional areas of the Bay, including marinas, may also need dredging pending results from the more extensive marina sediment study.

*Economics.* There will be costs associated with monitoring and characterization, dredging and implementation of other remediation strategies, where found necessary. The additional characterization studies will have a cost, but can be 1) conducted in combination with other studies, 2) conducted in a phased approach dependent on results from initial studies and monitoring. The Cu TMDLs require that a characterization study of marinas not evaluated in the Cu-Metals Marina Study (Coastkeeper & Candelaria 2007) be conducted to determine the Cu impairment in marinas and channels in the Bay. Testing and evaluation of other metals can be easily added to this study so that Zn and Hg will be characterized along with Cu. The costs of additional analyses should not be significant.

#### 4.1.2.2 As and Cr Action Plans

Monitoring and characterization are required to determine the sources of As and Cr. Based on the results, remediation strategies can be developed. These monitoring and investigations can be coordinated with other ongoing or planned monitoring to maximize efficiency and minimize costs.

##### (1) Source Analysis

A source identification study is needed to determine the source(s) of As and Cr. This study should include sampling of surface sediments throughout Lower Newport Bay, including marina sediments, to determine whether As and Cr exceed the ERM sediment guidelines and sediment toxicity is present.

##### (2) Continued Monitoring

- Monitoring of As and Cr should continue in both water and sediments, in both the Upper and Lower Bay, and tributary runoff, and Zn and Hg loads should be determined annually from tributary runoff.

##### (3) Additional characterization studies

- *Sediments near boatyards should be tested to determine whether As and Cr exceed the ERM sediment guidelines and sediment toxicity is present.*
- *Total As and Cr from the Storm Drain Study should also be analyzed to determine total As and Cr loads from storm drains in the Turning Basin area (dissolved loads were calculated for study report).*
- *Vegetation and algae studies may also be warranted as algae was shown to contain As and Cr.*

#### *Remediation Strategies*

- *Remediation strategies are not proposed at this time since all sources of As and Cr have not been quantified. Of the sources that have been quantified, mean annual As and Cr loads from storm drains are small, along with the Cr load from tributaries. The mean annual As load from tributaries is higher and may be evaluated for possible source reduction.*

*As discussed above, reevaluation of the TMDL may result in revised TMDLs based upon evaluation of the results of the implementation tasks including studies, monitoring and remediation. The reevaluation will occur 5 years after the approval of the BPA.*

#### **4.1.3 Summary of Reasonably Foreseeable Methods of Compliance**

In summary, implementation of the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans is expected to require actions by responsible parties that can be placed in four broad categories: (1) *Conversion of Cu AFPs to nontoxic AFPs (or in the interim, to non-Cu hull paints or Cu AFPs with leach rates at or below 9.5 µg/cm<sup>2</sup>/d), during the normal hull repainting schedule;* (2) *Use of BMPs during hull cleaning (e.g., soft cloths and/or hull cleaning container/filter methods);* (3) *Dredging of sediments, especially in marinas;* (4) *Monitoring and characterization of areas with no or little data, which may dictate the need for and nature of future remedial actions.*

The environmental analysis that follows addresses the potential environmental effects of each of these types of actions. Public education and outreach is expected to be an important component of implementation. Education and outreach is not expected to have any physical effect on the environment and is not further considered in this analysis.

#### **4.2 Impacts and Mitigation**

This section presents the Environmental Checklist and analysis of the potential environmental impacts, and mitigation where applicable, for the reasonably foreseeable methods of compliance described in the preceding sections. The environmental analysis takes into account a reasonable range of environmental, economic, and technical factors, populations and geographic areas, and to the extent known, implementation sites. The analysis also takes into account knowledge and experience gained with the implementation of Cu TMDLs in San Diego (Shelter Island) and Los Angeles (Marina del Rey). The Checklist and analyses are intended to satisfy the regulations described in Section 1.1.

The environmental setting in which the impacts may occur is Newport Bay and its watershed, to the extent that control actions in the Bay and watershed become necessary to address metals inputs to the Bay. The Bay and watershed are shown in Figure 1-1 and described in Section 3.1.

#### 4.2.1 Approach to Environmental Impact Analysis and Mitigation

A significant effect on the environment is defined in the California Code of Regulations as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.”

In formulating answers to the Checklist questions, including the mandatory findings of significance, Regional Board staff’s analysis takes into consideration the following:

1. The specific location and nature of all projects and tasks that are required to address impairment due to Cu, Zn, Hg, As and Cr cannot be determined at this time; therefore, the evaluation of the potential environmental effects of implementation of reasonably foreseeable methods of compliance is conducted at a programmatic level. As specific projects are proposed, the local lead agency(ies) will need to complete requisite CEQA analysis and certification at the project level.
2. USEPA established Metals TMDLs for Newport Bay, including Cu, Cd, Zn and Pb TMDLs, in 2002. The Regional Board and stakeholders have taken and are taking actions, including the implementation of certain BMPs in the watershed, in response to these TMDLs. If approved, as expected, the proposed Cu TMDLs and Zn Action Plan will replace USEPA’s TMDLs for Cu and Zn, and these TMDLs will be depromulgated and will no longer apply for regulatory purposes. In addition, based on Board staff’s Metals Impairment Assessment, USEPA’s TMDLs for Zn, Cd and Pb should be depromulgated (Staff Report, Section 4.0). The potential environmental effects of the implementation of the proposed TMDLs and Action Plans must be considered in the context of existing requirements for Cu and other metals reductions, and actions already taken and planned to achieve those reductions.
3. The analysis below assumes that project proponents will design, install, and maintain implementation measures following all applicable laws, regulations, ordinances, and formally adopted municipal and/or agency codes, standards, and practices. Several handbooks are available and currently used by agencies that provide guidance for the selection of certain Design Pollution Prevention, Construction Site, and Maintenance BMPs into a project to minimize environmental impacts (California Stormwater Quality Association [CASQA] 2003, California Department of Transportation [Caltrans] 2007 and 2007a).
4. Proposed projects, such as dredging, could generate varying degrees of environmental impacts including, but not limited to, noise associated with construction, air emissions associated with vessels and dredging equipment, transport and operations, and/or traffic associated with increased vehicle trips to work sites. Examples of generally accepted and recognized mitigation measures for dredging projects include: mitigation of excessive noise by conducting dredging activities during certain times of the day; use of less noisy equipment and use of sound barriers; and reduction of air emissions by use of lower emissions vehicles. These mitigation methods and BMPs are intended to avoid or minimize site-specific impacts to less than significant levels. For the purposes of this programmatic CEQA analysis, it is assumed that these mitigation methods and BMPs

will be employed, consistent with standards project permitting and building practices, ordinances, etc. and with any mitigation requirements imposed through project-level CEQA analysis and certification.

5. The significance of potential environmental effects was considered in relation to the duration, size of the impact area, and probability of occurrence. Social or economic changes related to a physical change in the environment were also considered in determining whether there would be a significant effect on the environment; however, adverse social and economic impacts alone are not considered significant effects on the environment. The Regional Board has analyzed the costs of implementing reasonably foreseeable BMPs to comply with the TMDLs and Action Plans. These economic factors have been considered in this environmental analysis and are summarized in the Staff Report (Section 8.3).

DRAFT

## 4.2.2 Environmental Checklist

### ISSUES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. AESTHETICS --</b>				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>II. AGRICULTURE RESOURCES:</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>III. AIR QUALITY</b> -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**IV. BIOLOGICAL RESOURCES --**

Would the project:

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

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. CULTURAL RESOURCES -- Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>VI. GEOLOGY AND SOILS -- Would the project:</b>				
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>VII. GREENHOUSE GAS EMISSIONS.</b>				
<b>Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>IX. HYDROLOGY AND WATER QUALITY -- Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>X. LAND USE AND PLANNING -</b>				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XI. MINERAL RESOURCES --</b> Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XII. NOISE --</b> Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XIII. POPULATION AND HOUSING --</b>				
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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**XIV. PUBLIC SERVICES**

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

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**XV. RECREATION**

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. TRANSPORTATION/TRAFFIC --</b>				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. UTILITIES AND SERVICE SYSTEMS</b> -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## **4.2.2 Environmental Checklist Analysis**

### **I. AESTHETICS – Would the project:**

#### **a) Have a substantial adverse effect on a scenic vista?**

**Answer: a) No impact**

**Discussion:** Dredging of sediments impaired due to Cu, Zn and Hg is likely to be necessary to implement the proposed Cu TMDLs and Zn and Hg Action Plans. Such operations are not expected to impact scenic vistas. Dredging equipment and operations have the potential to affect views of the Bay; however, such impacts would be of limited duration and spatial extent when impaired areas are dredged. Other reasonably foreseeable methods of compliance (including conversions of Cu AFPs to nontoxic AFPS, use of BMPs for boat hull cleaning, and monitoring and characterization studies) are expected to have no effect on scenic vistas or views of the Bay.

#### **b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**Answer: b) No impact**

**Discussion:** See response to I. a. None of the reasonably foreseeable methods of compliance with the TMDLs/Action Plans would have an effect on land-based scenic resources.

#### **c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Answer: c) Less than Significant Impact**

**Discussion:** See responses to I. a & b. The reasonably foreseeable methods of compliance would have no or only limited effects on the visual quality of the Bay. As described in I. a, above, dredging operations and equipment may adversely affect Bay aesthetics, but this impact would be limited in duration and spatial extent.

#### **d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?**

**Answer: d) Less than Significant Impact**

**Discussion:** All of the reasonably foreseeable methods of compliance are expected to be implemented during daylight hours; nighttime activities that would necessitate nighttime lighting are likely to be minimal. There may be temporary nighttime lighting at dredging operations for safety and security purposes; however, any such impact would be temporary and less than significant.

## II. AGRICULTURAL RESOURCES – Would the project:

- a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

**Answer: a) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance will necessitate changes to or have any effect on farmland.

- b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**Answer: b) No impact.**

**Discussion:** None of the reasonably foreseeable methods of compliance will have any effect on farmland, areas zoned for agricultural use, or a Williamson Act contract.

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

**Answer: c) No impact.**

**Discussion:** See response to item II. a, above.

## III. AIR QUALITY - Would the project:

- a) **Conflict with or obstruct implementation of the applicable air quality plan?**

**Answer: a) Less than Significant Impact**

**Discussion:** The project area is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The South Coast Air Basin (SCAB), which includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, is designated nonattainment for particulate matter 10 microns in diameter or less (PM<sub>10</sub>) and particulate matter 2.5 microns in diameter or less (PM<sub>2.5</sub>), and is a severe-17 nonattainment area for ozone under the federal standards for these criteria pollutants (i.e., ambient air in the SCAB does not meet the federal standards for these pollutants) (SCAQMD 2007). The area is also an extreme nonattainment area for ozone as classified under state law (*Ibid.*)

The SCAQMD Air Quality Management Plan (AQMP) contains control strategies designed to ensure continued attainment of ambient air quality standards (AAQS) for pollutants meeting said standards and to bring about attainment for those that do not. The AQMP sets a goal of demonstrating attainment of the federal PM<sub>2.5</sub> ambient air

quality standard by 2015 and the federal 8-hour ozone standard by 2024, while making expeditious progress toward attainment of state standards. The AQMP contains numerous stationary and mobile source control measures, including those under SCAQMD jurisdiction, as well as strategies contained in the California Air Resources Board's (CARB) *2007 State Implementation Plan (SIP)*, other supplemental strategies, and regional transportation control measures.

*Reasonably Foreseeable Methods of Compliance with the Proposed TMDLs and Action Plans*

The implementation plans require 1) the conversion of boats from Cu AFPs to nontoxic AFPs, and the use of BMPs for hull cleaning, 2) the remediation of sediment impairment due to Cu, Zn and Hg, likely by dredging, and 3) monitoring and characterization studies.

1) The conversion of boats with Cu AFPs to non-toxic AFPs (or to non-Cu AFPs or Cu AFPs with leach rates below  $9.5\mu\text{g}/\text{cm}^2/\text{d}$  (alternative AFPs) in the interim), will be necessary to achieve the Cu reductions required in the proposed Cu TMDLs. Per the proposed TMDL implementation plan, and interim and final compliance schedules, this conversion from Cu to nontoxic AFPs will take place over time during routine boat repainting. The conversion to nontoxic AFPs (and alternative AFPs), would not result in increased air quality impacts that would be in conflict with the applicable air quality plan. Further, the reduction of Cu discharges from boat hulls is already required by USEPA's 2002 Cu TMDLs. (*Note that USEPA's Cu TMDLs require a 92% reduction of Cu discharges from boats compared to an 83% reduction required in the proposed Cu TMDLs*). For both USEPA's Cu TMDLs and the proposed Cu TMDLs, these reductions will require, at least in part, the conversion of boats from Cu AFPs to nontoxic AFPs, and the use of BMPs for hull cleaning including soft cloths or hull cleaning container/filter methods.

The use of BMPs during hull cleaning, rather than non-BMPs, will help to reduce Cu loads from hull cleaning. The use of BMPs over non-BMPs would not result in increased air quality impact. The use of a hull cleaning container/filter method uses a filter system that requires a generator. This method may have minor impacts to air quality but they would be limited in duration and spatial extent. *The use of BMPs, such as soft cloths or container/filter methods, during hull cleaning would be an expected strategy to achieve the already established USEPA Cu TMDLs.*

*The proposed TMDLs would not have an increased impact on the environment relative to any potential impacts from the implementation of the established USEPA Cu TMDLs.*

2) The remediation of sediment impairment due to Cu, Zn and Hg), will likely be achieved by dredging those impaired areas. Dredging operations necessary to address sediment impairment by Cu, Zn and Hg, would entail the use of vessels and dredging equipment that rely on combustion engines. Monitoring and investigations may rely on increased vehicular and vessel traffic to reach specific water body locations of interest.

Emissions of various criteria pollutants for which AAQS have been adopted at both state and federal levels, as well as diesel particulate emissions and possibly other hazardous air contaminants, would likely result from engine use associated with these activities. Although these air emissions impacts would be temporary, they could be significant depending on the types of controls implemented, local meteorology, and other factors.

Since a substantial portion of NO<sub>x</sub>, SO<sub>x</sub>, and VOC emissions in the SCAB are under state jurisdiction, the 2007 AQMP relies heavily on successful implementation of CARB's State Strategy for reducing emissions of these criteria pollutants to attain the AAQS for ozone and PM<sub>2.5</sub>. This strategy has resulted in the adoption of several regulations aimed at reducing emissions from most forms of mobile sources.

Air emissions from vessel/vehicle/ dredge equipment are not expected to conflict with or obstruct implementation of the AQMP as sufficient legal mechanisms exist to both accommodate increases in air emissions from new projects, as well as enforcement mechanisms for noncompliance with the AQMP. Criteria pollutants are subject to planning requirements aimed at maintaining and achieving applicable AAQS. The SCAQMD has the authority to enforce state and federal laws and regulations and SCAQMD rules and regulations in order to ensure compliance with the AQMP. With implementation of the required mitigation measures and compliance with the applicable federal, state, and SCAQMD rules and regulations, the reasonably foreseeable methods of compliance would be consistent with the SCAQMD AQMP and would not violate the criteria identified above. Since the specific location and scope of all BMPs that will be needed to comply with the TMDLs and Action Plans is unknown at this time, project level agencies will need to review BMPs on a project-by-project basis to determine the significance of this impact, and recommend mitigation as needed to assure compliance with applicable SCAQMD rules and regulations.

*It should be noted that USEPA's TMDLs, including those for Cu and Zn, include numeric targets to be achieved in sediment, as well as water column targets. It is likely that dredging operations to remediate sediments that exceed the sediment targets in the proposed TMDLs and Action Plans would also be necessary to achieve the sediment targets in USEPA's TMDLs.<sup>15</sup>*

3) Monitoring and characterization studies are a requisite part of any implementation strategy to achieve either USEPA's TMDLs or the proposed TMDLs and Action Plans; therefore, the proposed TMDLs and Action Plans would not have an increased impact on the environment, including air quality, over any potential impact resulting from the implementation of the already established USEPA TMDLs.

The implementation of new stationary sources of emissions is not expected to be necessary to achieve compliance with the TMDLs and Action Plans.

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<sup>15</sup> Note that sediment targets in USEPA's TMDLs are based on lower sediment guidelines (TELs) compared to sediment targets in the proposed Cu TMDLs and Zn,Hg,As and Cr Action Plans which are based on ERLs.

**b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**Answer: b) Less than Significant Impact**

**Discussion:** Depending on the quantity and nature of emissions associated with dredging operations implemented to remediate sediment impairment due to Cu, Zn and Hg, and increased vehicular/vessel traffic necessary to conduct monitoring and investigations, including special studies, related to all the metals for which TMDLs and Action Plans are now proposed, a substantial contribution to an existing or projected violation of the AAQS could result but it would likely be temporary. Existing mechanisms are available and required to reduce the likelihood of such violations and render the potential for this impact as less than significant.

See also response III.a. Implementation of the proposed TMDLs and Action Plans is not expected to result in greater potential for adverse environmental impacts than implementation of the already established USEPA TMDLs.

**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)?**

**Answer: c) Less than Significant with Mitigation Incorporated**

**Discussion:** As stated above, the SCAB is designated nonattainment for PM<sub>10</sub>, PM<sub>2.5</sub>, and ozone under the federal and state AAQS. The implementation of dredging operations and increased use of vessels/vehicles to conduct monitoring and investigations necessary to implement and comply with the AAQS and the TMDLs and Action Plans may result in increases of criteria pollutants for limited duration and spatial extent.. Although increases in emissions that conform to applicable regulations are considered within the framework of the AQMP, the fact that the region is currently in nonattainment for these pollutants would indicate that any increased emissions are cumulatively considerable.

The AQMP projects attainment of the nonattainment pollutants PM<sub>10</sub>, PM<sub>2.5</sub>, and ozone, through application of current and future emission reduction measures. For example, for stationary emissions units, new projects that have a potential to emit four tons per year or more of any of these pollutants must offset the emissions at a ratio of between 1.0 and 1.2, depending on the nature of the emissions reduction credit source<sup>16</sup>. Since emissions reductions credits (ERCs) are determined to be real, quantifiable, enforceable, and permanent by the SCAQMD, using them to offset emissions increases would not result in a net emissions increase of the nonattainment criteria pollutants in a cumulative sense, disregarding local spatialized impacts. An emissions increase near

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<sup>16</sup> SCAQMD Rules 1303(b);1304(d); and Regulation XVI, Mobile Source Offset Program.

four tons per year per project may be considerable when factoring in other sources of criteria pollutants in the SCAB, including both mobile and stationary sources. However, many projects may contribute substantially less than four tons/year depending on project needs. For example, a 500 brake horsepower (bhp) diesel engine employed in a BMP project would have a worst case potential to emit of 0.72 tons diesel particulate matter per year where the engine was determined to be subject to the 0.15 grams/bhp per hour limit in California Administrative Code, Title 17, Section 93115.6 (50 hours or less required maintenance and testing and no exemptions apply).

As described above and in the preceding Air Quality responses, responsible agencies implementing specific projects such as dredging and monitoring programs can reduce the impact of increased emissions due to project implementation by (1) complying with all applicable rules and (2) implementing voluntary programs to reduce emissions beyond applicable requirements. This may include employing cleaner technologies and equipment.

*Once again, it is important to note that implementation of the proposed TMDLs and Action Plans would not have any greater potential environmental impact than the implementation of the already established USEPA TMDLs.*

**d) Expose sensitive receptors to substantial pollutant concentrations?**

**Answer: d) Less than Significant Impact**

**Discussion:** Sensitive receptors generally include children, the elderly, and those with existing pre-conditions that may be worsened by exposure of air contaminants emitted at project sites (e.g., dredging). This may also include sensitive aquatic organisms. Project related emissions may expose sensitive receptors to pollutant concentrations, which may be substantial depending on the sensitivity of the exposed individual, local meteorology, and the types and locations of engines/equipment employed.

See also prior responses. Implementation of the proposed TMDLs and Action Plans is not expected to result in greater potential for adverse environmental impacts than implementation of the already established USEPA TMDLs.

The exposure of sensitive receptors to substantial pollutant concentrations can and will be required to be reduced by the implementation of available BMPs to insignificant levels pursuant to existing regulations, laws and SCAQMD requirements.

**e) Create objectionable odors affecting a substantial number of people?**

**Answer: e) Less than Significant impact with Mitigation Incorporated**

**Discussion:** Noxious odors can result from the exhaust from vehicles and equipment used to implement the reasonably foreseeable methods of compliance. Such impacts would be of limited duration and spatial extent. Dredging could expose sediments causing odors (e.g., sulfides).

The emission of air contaminants that create a condition of public nuisance is prohibited by SCAQMD Rule 402. Conformance with existing regulations, including the use of vehicles meeting applicable operating and emissions standards, would reduce noxious emissions. Objectionable odors from engine exhaust or from dredging sites would be temporary and would dissipate once the vehicle has passed through the area or when the dredging operation is complete.

See also prior responses. *Implementation of the proposed TMDLs and Action Plans is not expected to result in greater potential for adverse environmental impacts than implementation of the already established USEPA TMDLs.*

It may be feasible to schedule dredging activities during periods when there are fewer people in the area. These mitigation measures can and should be required by local lead or responsible agencies through their CEQA and/or planning processes.

#### IV. BIOLOGICAL RESOURCES - Would the project:

- a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?**

**Answer: a) Less than Significant Impact with Mitigation Incorporated**

**Discussion:** State and/or federal listed threatened and endangered species that are known to or may occur in freshwater areas of Newport Bay and its watershed include:

##### Birds

- California Least Tern - (*Sterna antillarum browni* (endangered piscivorous bird present and nesting in the Newport Bay watershed),
- Ridgway's Rail - *Rallus obsoletus levipes* (endangered omnivorous bird - largest colony in California is located in Upper Newport Bay)
- Western snowy plover - *Charadrius alexandrinus nivosus* (threatened shorebird)
- California Gnatcatcher - *Polioptila californica californica* (threatened terrestrial bird that eats insects, some of which have an aquatic larval stage)
- Least Bell's Vireo - *Vireo bellii pusillus* (endangered terrestrial bird that eats insects, some of which have an aquatic larval stage)
- Southwestern Willow Flycatcher – *Empidonax traillii extimas* (endangered terrestrial bird that eats insects, some of which have an aquatic larval stage)

### Amphibians

- Western Pond turtle - *Clemmys marmorata pallida* (California species of special concern; potential habitat in Big Canyon Wash; no confirmed population)
- Arroyo toad - *Bufo* (syn. *Anaxyrus*) *californicus* (endangered; potential habitat in the watershed, though probably only found in the upper reaches; no confirmed populations)

None of the reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans is expected to have any significant, long-term adverse effect on biological resources, including listed or candidate species of concern.

*The implementation plans requires 1) the conversion of boats from Cu AFPs to nontoxic AFPs, and the use of BMPs for hull cleaning, 2) the remediation of sediment impairment due to Cu, Zn and Hg, likely by dredging, and 3) monitoring and characterization studies.*

1) The conversion of boats from Cu AFPs to nontoxic AFPs can be implemented during the routine repainting of boat hulls during periodic boat hull maintenance. *The conversion from Cu AFPs to nontoxic (or alternative) AFPs conducted as part of this routine process will have no adverse impact. The conversion from Cu to nontoxic (or alternative) AFPs would already be required to achieve USEPA's established Cu TMDLs; and the proposed Cu TMDLs would require less reduction in Cu loads from boats (83%) than USEPA's TMDLs which require a 92% load reduction from boats. This lower reduction in Cu loads required by the proposed Cu TMDLs would also require a lower number of boat conversions to nontoxic AFPs.*

The use of BMPs during hull cleaning, rather than non-BMPs, will help to reduce Cu loads to the Bay; , thereby improving conditions for the biota without causing other adverse impact to biological resources and the environment.

The hull cleaning container/filter method uses a container for cleaning hulls that contains the dirty water and solids from hull cleaning. The water is then filtered before being discharged into the Bay and the solids at the bottom of the container are collected, so that *no Cu (or other metal) discharges from hull cleaning are released to the Bay from this hull cleaning method.* This method, therefore, improves water and sediment quality for the biota without causing other adverse impact to biological resources and the environment.

*Once again, the use of boat conversions from Cu to nontoxic AFPs and the use of BMPs during hull cleaning would be strategies to achieve the already established USEPA Cu TMDLs. The proposed Cu TMDLs would not have an increased impact on the environment relative to any potential impacts of the established USEPA Cu TMDLs.*

2) The remediation of sediment impairment due to Cu, Zn and Hg, will likely be achieved by dredging those impaired areas. Dredging operations have the potential to cause disturbances to both aquatic organisms and avian wildlife, including the

endangered/threatened species listed above, as a result of the physical presence and operation of vessels and dredge equipment and their operators, noise associated with the operations, and increases in turbidity or other water quality effects (See IX. Hydrology and Water Quality) that may result from the removal of sediment. Removal of sediment would result in the loss of the benthic organisms living in the sediments; however, no benthic organisms are listed or a candidate species of concern.

Specific dredging projects would be reviewed and approved by the CDFW, USFWS and the Regional Board (for consideration of Clean Water Act Section 401 water quality standards certification and regulation under waste discharge requirements). These agencies would disallow or require modification of projects that would result in significant adverse impacts on the biota and related beneficial uses.

Specific dredging projects would be subject to requirements for avoidance and mitigation imposed by the CDFW, and USFWS in cases involving federally-listed species. Dredging requirements include: pre-dredging surveys to determine the presence of endangered and/or sensitive wildlife and vegetative species (such as eelgrass) and the need for mitigation for those species; incorporation of buffer areas in the project design; project timing restrictions to minimize impact(s) to sensitive species, especially during nesting activities; and minimization of impact by use of alternative design/implementation features.

Areas that have been dredged are expected to be repopulated naturally by benthic organisms such that no significant long-term adverse impacts to these organisms is expected to occur. Dredging projects will need to be conducted in accordance with the avoidance and mitigation requirements of the Southern California Eelgrass Mitigation Policy.

The potential adverse effects of dredging operations on water quality and, thereby, on biological resources would be short-term in nature and can be reduced to less than significant by the implementation of standard BMPs, such as silt curtains. Requirements for the implementation of these measures are a part of the Waste Discharge Requirements issued by the Regional Board to regulate these operations. Potential effects due to noise and physical presence can be minimized by the selection and use of proper equipment, and, as noted above, timing restrictions to limit disturbance.

3) Monitoring and characterization studies are a requisite part of any implementation strategy to achieve either USEPA's TMDLs or the proposed TMDLs and Action Plans. Monitoring and investigation activities are expected to have minimal impacts on the biota, other than organisms that may be lost to sample collection and analysis.

Any impacts on biological resources due to the implementation of the proposed TMDLs and Action Plans are expected to be limited in scope and duration. Once again, it should be pointed out that the potential biological resources (and other environmental) impacts of the proposed TMDLs and Action Plans would not be different from the potential impacts of implementing the already established USEPA TMDLs.

There is extensive experience in the Newport Bay watershed with CEQA-compliance, permitting and implementation of large-scale dredging projects (beyond the likely scope of the dredging required to address sediment impairment in the Bay.) Dredging in Newport Bay has previously been carefully coordinated with the CDFW and USFWS to achieve biological restoration and protection goals for the Upper Newport Bay Ecological Reserve. Such coordination could be accomplished elsewhere in the Bay in relation to the needs to address other Bay beneficial uses, such as navigation (NAV). The purpose of the TMDLs and Action Plans is to protect biological resources that are impaired due to Cu, Zn, Hg, As and Cr in water and/or sediments. The implementation of the reasonably foreseeable methods of compliance; therefore, is anticipated to provide a substantially positive impact on biological resources and beneficial uses in the watershed.

- 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 Wildlife or U.S. Fish and Wildlife Service?**

**Answer: b) Less than Significant with Mitigation Incorporated**

**Discussion:** See response to item IV. a (Biological Resources) above.

- 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?**

**Answer: c) No impact.**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to take place in or otherwise affect wetlands.

- 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?**

**Answer: d) Less than Significant Impact with Mitigation Incorporated**

**Discussion:** See responses to items IV. a (Biological Resources) above.

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Answer: e) No impact**

**Discussion:** It is not reasonably foreseeable that any project implemented in response to the TMDLs and Action Plans would conflict with relevant local policies or ordinances protecting biological resources. As individual reasonably foreseeable projects are proposed, project level agencies will evaluate the potential for the specific projects to conflict with applicable local policies protecting biological resources. If siting or other conflicts arise, projects will need to be redesigned to conform to the local policies or ordinances, unless variances, if available, are obtained. Future BMP projects would be required to comply with any applicable local policies or ordinances; therefore, no impacts are reasonably foreseeable.

**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?**

**Answer: f) No impact**

**Discussion:** See response to IV.a. (Biological Resources) above.

None of the reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans would have an impact on habitat conservation plans.

**V. CULTURAL RESOURCES -- Would the project:**

**a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?**

**Answer: a) No impact**

**Discussion:** An historical resource is defined under CEQA Guidelines Section 15064.5 as a “resource listed in, or determined eligible for listing in the California Register.” The term historical resource is also defined as “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or which is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural history of California.”<sup>17</sup>

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?**

**Answer: b) No impact**

**Discussion:** See response to V. a.(Cultural Resources) above.

Archaeological resources may be present above ground or subsurface. Archaeological resources include physical remnants of human activities of an area’s pre-historical (aboriginal/Native American) and historical (European or Euro-American) time. Material

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<sup>17</sup> California Public Resource Code Section 5024.1, Title 14 California Code of Regulation Section 4850 et seq.

remains may include, but are not limited to: artifacts, densities of artifacts or isolated finds. Archaeological resources are often of cultural or religious importance to Native American groups, particularly if the resource includes human and/or animal burials.

None of the reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans would have an impact on archaeological resources. Archaeological resources may be present in the watershed but are not expected to be found in the Bay, the focus of the reasonably foreseeable BMPs, given the Bay's highly disturbed nature (as the result of past dredging activities).

**c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Answer: c) No impact**

**Discussion:** See responses to V. a and b (Cultural Resources) above.

Paleontological resources are fossilized remains and/or traces of prehistoric plant life and animal life (invertebrate and vertebrates), including imprints. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities. While fossil remains such as wood, bones, teeth, leaves and shells are the most common fossils, under certain conditions soft tissues, tracks and trails may be preserved as fossils. Paleontological resources tend to exist in sedimentary rock deposits and are usually discovered during grading or excavation operations. Ground-disturbing activities in fossil-bearing soils and rock formations have the potential to damage or destroy paleontological resources that may be present below the ground surface. Portions of the Newport Bay watershed are considered to be paleontologically sensitive; however, given the highly disturbed nature of the Bay due to sediment deposition and dredging activities, the Bay itself is not considered to be paleontologically sensitive..

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**Answer: d) No impact**

**Discussion:** See responses to V. a, b and c (Cultural Resources) above.

**VI. GEOLOGY AND SOILS - Would the project:**

**a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

**i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for**

**the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

**ii) Strong seismic ground shaking?**

**iii) Seismic-related ground failure, including liquefaction?**

**iv) Landslides?**

**Answer: (a) (i, ii, iii, iv) No impact**

**Discussion:**

None of the reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans is expected to have any physical effects on Newport Bay that would result in earthquake/landslide related exposures of human beings.

**b) Result in substantial soil erosion or the loss of topsoil?**

**Answer: b) No impact**

**Discussion:**

None of the reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans is expected to have any impacts on soil erosion or the loss of topsoil. The reasonably foreseeable methods of compliance are focused on and in Newport Bay itself. Dredging activities have been and continue to be expected to be necessary to remove sediments from the Bay to maintain navigational depths, as well as to address sediment impairment as the result of metals. As described in response IV.a. (Biological Resources), dredging operations may also be coordinated with habitat restoration plans.

**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- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

**Answer: c) No impact**

**Discussion:** See responses to VI. a and b, (Geology and Soils) above.

**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?**

**Answer: d) No impact**

**Discussion:** See responses to VI. a, b and c (Geology and Soils) above.

**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?**

**Answer: e) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans is expected to involve the use of septic tanks or alternative wastewater disposal systems.

**VII. GREENHOUSE GAS EMISSIONS - Would the project:**

**a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

**Answer: a) Less than Significant with Mitigation Incorporated**

**Discussion:** See response to III. c ( Air Quality) above.

**b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**Answer: b) Less than significant with Mitigation Incorporated**

**Discussion:** See response to III. a and c ( Air Quality) above.

*Potential Effects of Project on Global Climate Change*

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of greenhouse gases at 400 to 450 ppm carbon dioxide-equivalent concentration is required to keep global mean warming below 2 degrees Celsius (°C), which in turn is assumed to be necessary to avoid dangerous climate change.

California Governor Arnold Schwarzenegger issued Executive Order S-3-05 in June 2005, which established the following greenhouse gas emission reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels; and
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

Although greenhouse gases (GHG) are not considered a criteria air pollutant, Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006 requires that the California Air Resources Board (CARB) determine what the statewide greenhouse gas emissions level was in 1990, and approve a statewide greenhouse gas emissions limit

that is equivalent to that level, to be achieved by 2020. CARB has approved a 2020 emissions limit of 427 metric tons of CO<sub>2</sub> equivalent.

The implementation of dredging projects, monitoring and investigations may result in increased emissions of greenhouse gases, principally carbon dioxide (CO<sub>2</sub>), as a result of the combustion of any fuel during the dredging activities and in transit to monitoring locations. Additional vehicular/vessel use needed to conduct monitoring and investigations is expected to be minimal; these efforts are expected to be coordinated with monitoring already underway. Depending on the scale and number of dredging projects determined to be necessary, quantifiable amounts of CO<sub>2</sub> would be emitted from the dredge vessel engine, dredge equipment engines, and vehicles associated with trips necessary for operation of the dredge activities. Agencies implementing these dredging projects would need to ensure that the activities would comply with applicable regulations and remediation measures developed pursuant to AB 32.

The impact of increased CO<sub>2</sub> emissions resulting from the implementation of the TMDLs/Action Plans cannot be accurately determined because the relative contribution of project CO<sub>2</sub> emission is miniscule in comparison to worldwide emissions of greenhouse gases. It is generally recognized by leading atmospheric scientists that the earth's atmosphere is warming due to worldwide emissions of greenhouse gasses, including CO<sub>2</sub>, which is the principal greenhouse gas emitted directly as a result of anthropogenic activities. The impact that global climate change would have includes increased temperatures, rising sea levels, reductions to the Sierra Nevada snowpack, earlier snowmelt, and varying patterns of precipitation and runoff (CDWR 2005). These impacts may profoundly affect the ability to manage water supplies and other natural resources. Therefore, the CO<sub>2</sub> emissions resulting from the implementation of dredging projects would play an incremental role in exacerbating these projected impacts, many of which may have already begun to occur.

As described in the preceding Air Quality responses, responsible agencies implementing specific projects can reduce the impact of increased emissions due to BMP implementation by (1) complying with all applicable rules and (2) implementing voluntary programs to reduce emissions beyond applicable requirements. This may include employing cleaner technologies and equipment.

It should be noted again that the USEPA TMDLs, including those for copper and zinc, include numeric targets to be achieved in sediment, as well as water column targets. It is likely that dredging operations to remediate sediments that exceed these targets would also be necessary to achieve these TMDL sediment targets. Monitoring/investigation is a requisite part of any implementation strategy to achieve either the USEPA TMDLs or those TMDLs/Action Plans now proposed. Therefore, the proposed TMDLs/Action Plans would not have an increased impact on the environment, including air quality and greenhouse gas emissions, over any potential impact resulting from the implementation of the already established USEPA TMDLs.

**VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:**

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

**Answer: a) Less than Significant Impact**

**Discussion:**

Hazardous waste is classified as a waste product or byproduct with properties that make it potentially dangerous or harmful to human health or the environment. Hazardous wastes can be liquids, solids, or contained gases. In regulatory terms, the Department of Toxic Substances Control (DTSC) defines a hazardous waste as a waste that appears on one of the four Resource Conservation and Recovery Act (RCRA) hazardous wastes lists or that exhibits one of the four characteristics of a hazardous waste – ignitability, corrosivity, reactivity, or toxicity, unless specifically exempted<sup>18</sup>. However, materials can be considered hazardous even if they are not specifically listed or don't exhibit any characteristic of a hazardous waste. For purposes of this SED, the term "hazardous material" refers to both hazardous substances and hazardous waste. The conversion of boats from Cu to nontoxic (alternative) AFPs may entail the use or generation of hazardous materials, e.g. solvents and de-greasers and AFPS waste; however, the repainting of boat hulls is a routine part of vessel maintenance. The recommended interim and final compliance schedules for the proposed Cu TMDLs allow conversions from Cu to nontoxic (alternative) AFPs to take place during routine repainting schedules. USEPA's Cu TMDLs also require a significant reduction in Cu loads from boat hulls (92%), which is greater than the 83% reduction required in the proposed Cu TMDLs). This reduction, required by USEPA's Cu TMDLs, can be accomplished in full only by the conversion to nontoxic AFPS (or non-Cu or lower leach rate Cu AFPs in the interim); therefore, the proposed Cu TMDLs would not have a new or increased effect on the environment with respect to hazardous materials.

Dredging activities are not anticipated to involve the direct use of substances that would be considered to be hazardous. These activities would involve the temporary use of equipment and vessels that contain hazardous substances, such as petroleum-based fuels, which could be accidentally released if the equipment or vessels are improperly operated, maintained or damaged. Adherence to requirements to employ established operational practices and safety measures will prevent the accidental release of hazardous materials to the environment. The level of risk associated with the accidental release of hazardous substances under these circumstances is not considered significant.

Reasonably foreseeable levels of hazardous materials and waste associated with the conversion of Cu AFPs to nontoxic (alternative) AFPs on boat hulls and dredging projects are not anticipated to be significant enough to result in a significant hazard to

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<sup>18</sup> California Code of Regulations, Title 22 of the California Administrative Code, Sections 66261.21 to 66261.24, 66261.3, and 66261.30 to 66261.35.

the public or the environment through the routine transport, use, or disposal of hazardous materials. Potential hazards associated with the use of hazardous materials can be mitigated with proper handling, storage and disposal procedures. Compliance with applicable federal, state, and local regulations related to handling, storage, transport and disposing of hazardous materials would ensure impacts associated with operation of reasonably foreseeable methods of compliance are reduced to less than significant levels.

- 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?**

**Answer: b) Less than Significant Impact**

**Discussion:** Reasonably foreseeable levels of hazardous materials and waste associated with the reasonably foreseeable methods of compliance are not anticipated to be significant enough to result in a significant hazard to the public or the environment through releases that result from reasonably foreseeable upset and accident conditions. Compliance with applicable federal, state, and local regulations related to handling, storage, transport and disposing of hazardous materials would ensure impacts associated with the risk of upset or accident would be reduced to less than significant, levels.

- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Answer: c) No impact**

**Discussion:** Neither conversions from Cu to nontoxic AFPs on boat hulls nor dredging projects are expected to take place 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?**

**Answer: d) No impact**

**Discussion:** It is not reasonably foreseeable that any of the reasonably foreseeable methods of compliance would be located on a site location that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, given the likely need for and cost of remedial actions at such sites. Should any BMP be located on a listed site, project proponents would be required to mitigate all hazardous

risk to below hazardous levels established by Title 22 of the California Code of Regulations.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

**Answer: e) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance with the proposed TMDLs and Action Plans is expected to take place in or adjacent to Newport Bay. For this reason, no impacts related to air traffic or airport access are reasonably foreseeable.

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**Answer: f) No impact**

**Discussion:** No active operational private airstrips are located within the Newport Bay watershed. Therefore, reasonably foreseeable BMPs would not be located within the vicinity of a private airstrip. Therefore, no impact would occur.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Answer: g) No impact**

**Discussion:** The implementation of reasonably foreseeable BMPs to comply with the proposed TMDLs and Action Plans is expected to take place in or adjacent to Newport Bay. For this reason, no impacts related to emergency response/evacuation is reasonably foreseeable.

- 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?**

**Answer: h) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance with the proposed TMDLs/ and Action Plans is expected to take place in or adjacent to Newport Bay. For this reason, no impacts related to wildland fires are reasonably foreseeable.

**IX. HYDROLOGY AND WATER QUALITY – Would the project:**

**a) Violate any water quality standards or waste discharge requirements?**

**Answer: a) Less than Significant Impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to violate water quality standards or waste discharge requirements (WDRs), and the effects of dredging will be limited in duration and spatial extent.

Dredging operations have the potential to cause increases in some water quality parameters, such as turbidity or dissolved oxygen, that may occur from the removal of sediment. Dredging could also cause some pollutants to be released into the water column during dredging; however, the use of silt curtains and other dredging requirements will limit spatial exposure and reduce the risk of violating water quality standards and WDRs,

Specific dredging projects would be reviewed and approved by the ACOE and the Regional Board (for consideration of Clean Water Act Section 401 water quality standards certification and regulation under waste discharge requirements). These agencies would disallow or require modification of projects that would result in significant adverse impacts to water quality.

The potential adverse effects of dredging operations on water quality would be short-term in nature and can be reduced to less than significant by the implementation of standard BMPs, such as silt curtains. Requirements for the implementation of these measures are a part of the WDRs issued by the Regional Board to regulate these operations.

**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)?**

**Answer: b) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to have an effect on groundwater supplies or interfere with groundwater recharge.

**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?**

**Answer: c) No Impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to substantially alter the existing drainage patterns.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

**Answer: d) No Impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to have any effect on the existing drainage patterns.

- 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?**

**Answer: e) No Impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to 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?**

**Answer: f) Less than Significant**

**Discussion:** See response to IX. a. HYDROLOGY AND WATER QUALITY, above.

- 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?**

**Answer: g) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance will have any effect on housing.

- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

**Answer: h) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to require the placement of 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?**

**Answer: i) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to result in or necessitate physical changes that would expose people or structures to flooding.

- j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?**

**Answer: j) No impact**

**Discussion:** None of the reasonably foreseeable methods of compliance is expected to result in or necessitate physical changes that would expose people or structures to inundation by seiche, tsunami, or mudflow.

**X. LAND USE AND PLANNING - Would the project:**

- a) Physically divide an established community?**

**Answer: a) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance is expected to take place in or adjacent to Newport Bay. For this reason, no impacts related to established communities are reasonably foreseeable.

- 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?**

**Answer: b) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance would not result in or necessitate changes to applicable land use plans, policies or regulations, whether or not adopted to avoid or mitigate an environmental effect.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**Answer: c) No impact**

**Discussion:** The reasonably foreseeable methods of compliance would be implemented in and adjacent to Newport Bay. Upper Newport Bay includes an Ecological Reserve and Nature Preserve. Dredging activities in the Bay have been extensively coordinated with habitat planning and needs in the Reserve. Future dredging activities could likewise be coordinated with habitat conservation/natural community conservation efforts. The reasonably foreseeable methods of compliance would not affect habitat conservation plans established in the Newport Bay watershed.

**XI. MINERAL RESOURCES** -- Would the project:

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

**Answer: a) No impact**

**Discussion:** The reasonably foreseeable methods of compliance would have no effect on known mineral resources.

**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?**

**Answer: b) No impact**

**Discussion:** See response to XI. a (Mineral Resources) above.

The reasonably foreseeable methods of compliance would have no effect on known mineral resources.

**XII. NOISE** -- Would the project result in:

**a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

**Answer: a) No impact**

**Discussion:** The reasonably foreseeable methods of compliance include dredging activities to remove sediment impaired by Cu, Zn and Hg. These operations may result in temporary increases in noise levels as the activities are conducted. Such effects would be limited in scope and duration. Moreover, these operations would not be significantly different, if at all, from those that would be required to meet the sediment numeric targets in the established USEPA TMDLs.

**b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Answer: b) No impact**

**Discussion:** The reasonably foreseeable methods of compliance would not result in or contribute to groundborne vibration or noise.

**c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Answer: c) No impact**

**Discussion:** See response XII. a. (Noise), above.

**d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Answer: d) Less than significant**

**Discussion:** See response XII. a (Noise), above.

The reasonably foreseeable methods of compliance (specifically, dredging operations) have the potential to result in limited (spatially and temporally) increases in ambient noise levels in the vicinity of the operations. These impacts are not considered significant.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**Answer: e) No impact**

**Discussion:** See response XII. a (Noise), above.

The reasonably foreseeable methods of compliance (specifically, dredging operations) have the potential to result in limited (spatially and temporally) increases in ambient noise levels in the vicinity of the operations. These impacts are not considered significant and would have no effect on people residing or working in the vicinity of any airport.

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

**Answer: f) No impact**

**Discussion:** See response XII. e (Noise), above.

**XIII. POPULATION AND HOUSING** - Would the project:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**Answer: a) No impact**

**Discussion:** The implementation of the reasonably foreseeable methods of compliance will have no effect, either direct or indirect, on population growth.

- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

**Answer: b) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance will have no effect on existing housing.

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**Answer: c) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance will have no effect on the numbers or distribution of the population

**XIV. PUBLIC SERVICES** Would the project:

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

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

**Answer: a) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance will require no construction for new or altered governmental facilities.

**XV. RECREATION** - Would the project:

**a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**Answer: a) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance would have no effect on the use of existing neighborhood or regional parks.

**b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

**Answer: b) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance would have no impact on recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

**XVI. TRANSPORTATION/TRAFFIC** -- Would the project:

**a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

**Answer: a) No impact**

**Discussion:** The reasonably foreseeable methods of compliance would have no impact on transportation/transportation systems.

**b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other**

**standards established by the county congestion management agency for designated roads or highways?**

**Answer: b) No impact**

**Discussion:**

See response to XVI. a (TRANSPORTATION/TRAFFIC), above.

**c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**Answer: c) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance would have no effect on air traffic.

**d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**Answer: d) No impact**

**Discussion:**

The implementation of reasonably foreseeable methods of compliance would not result in physical changes that would substantially increase hazards or incompatible uses.

**e) Result in inadequate emergency access?**

**Answer: e) No impact**

**Discussion:** See responses to XVI. a and b(TRANSPORTATION/TRAFFIC), above.

**f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of such facilities?**

**Answer: f) No impact**

**Discussion:** See responses to XVI. a, b and e (TRANSPORTATION/TRAFFIC), above.

**XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:**

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

**Answer: a) No impact**

**Discussion:** The reasonably feasible methods of compliance are not expected to result in waste discharges that would affect compliance with requirements imposed by the Regional Board on publicly-owned treatment works.

**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?**

**Answer: b) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance do not require or will result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

**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?**

**Answer: c) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance do not require or will result in the construction of new storm water drainage facilities.

**d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**Answer: d) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance have sufficient water supplies.

**e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

**Answer: e) No impact**

**Discussion:** See response to XVII. b (UTILITIES AND SERVICE SYSTEMS), above.

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

**Answer: f) Less than Significant with Mitigation Incorporated**

**Discussion:** Waste products may be produced as the result of the implementation and operation of reasonably foreseeable methods of compliance. Dredging activities would result in the need to dispose of dredge spoils, likely at an offshore disposal site in the

Pacific Ocean. Use of the hull cleaning container /filter method is expected to generate relatively small amounts of waste that would need to be disposed of in a landfill. In both cases, the suitability of the waste materials for disposal and the capacity of the disposal sites would need to be confirmed in advance. Compliance with established state and local waste reduction programs and policies would reduce the volume of solid waste entering landfills. All projects would be required to comply with hazardous waste disposal regulations.

**g) Comply with federal, state, and local statutes and regulations related to solid waste?**

**Answer: g) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance will be required to comply with applicable solid waste statutes and regulations. Compliance with these statutes and regulations would be evaluated at the project level when more is known about the specific project characteristics, needs, and magnitude.

**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

**a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Answer: a) Less than Significant with Mitigation Incorporated**

**Discussion:** As identified in the preceding analysis, the implementation of reasonably foreseeable methods of compliance has the potential to affect the quality of the environment with respect to air quality and greenhouse gas emissions, and biological resources; however, in each case, these potential impacts can be mitigated to less than significant levels. The goal of the proposed TMDLs and Action Plans is to improve the quality of the environment to protect biological resources. As site-specific projects are proposed and subjected to CEQA analysis, appropriate mitigation measures, including alternative BMP selection, alternative siting, redesign, etc., can and should be identified and required by the local agencies/project proponents.

**b) Does the project have 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)?**

**Answer: b) No impact**

**Discussion:** The implementation of reasonably foreseeable methods of compliance would not be expected to have considerable cumulative impacts. The potential environmental impacts of these methods are expected to be of limited duration and spatial extent, and would not contribute to the effects of other projects, past, current or future.

**c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**Answer: c) Less than Significant Impact**

**Discussion:** See response XVIII. a. The implementation of reasonably foreseeable methods of compliance may result in environmental effects on air quality and noise that could affect human beings. However, these impacts are expected to be limited in duration and spatial extent, and are not expected to cause substantial adverse long-term effects on human beings either directly or indirectly.

## **5.0 PROGRAM LEVEL ALTERNATIVES**

Regulations implementing CEQA require an analysis of reasonably foreseeable alternative means of compliance with the TMDLs and Action Plans that would avoid or eliminate reasonably foreseeable environmental impacts<sup>19</sup>. In addition, pursuant to the State Boards' CEQA regulations, this environmental review must include an analysis of reasonable alternatives to the proposed adoption of the Basin Plan amendments to include the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans for Newport Bay. The Regional Board must consider whether there are reasonable alternatives to the proposed Basin Plan amendments that would fulfill the underlying purpose of the proposed amendment to achieve water quality standards, but would minimize or eliminate the potential adverse environmental effects discussed above.

The alternatives evaluated include:

- 1) No action. Do not adopt the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans. This would leave USEPA's TMDLs in place, and would require regulatory actions and actions by responsible parties required to implement the established USEPA TMDLs for Cu, Cd, Zn and Pb that apply to both Newport Bay and San Diego Creek.
- 2) Adopt modified Cu TMDLs and Zn, Hg, As and Cr Non-TMDL Action Plans, (e.g. to specify different numeric targets, allocations, or implementation strategies, or a modified strategy to address impairment by Cu, Zn, As and Cr) that would entail a different combination of TMDLs and Non-TMDL Action Plans (or other alternative restoration approaches).

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<sup>19</sup> 14 CCR § 15187(c)(3)

- 3) Recommended alternative. Adopt the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans as presented.

## **5.1 No Project Alternative**

Pursuant to this alternative, the Regional Board would not act to adopt the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans for Newport Bay. USEPA's 2002 TMDLs for Cu, Cd, Zn and Pb for Newport Bay would remain in effect. The Regional Board would be obligated to take regulatory actions, including the issuance and enforcement of waste discharge requirements to implement USEPA's Cu, Cd, Zn and Pb TMDLs. Dischargers would be required to implement tasks & schedules to achieve compliance with the Board's discharge requirements and USEPA's TMDLs. The methods of compliance that would likely be implemented in response to USEPA's TMDLs are expected to be the same as or similar to the reasonably foreseeable tasks and schedules identified for the proposed Cu TMDLs and Zn, Hg, As and Cr, and evaluated in this SED; however, this alternative would also include implementation of the USEPA's Zn, Cd and Pb TMDLs (which are not included in the recommended alternative). The No Action alternative, therefore, would not alleviate the potential environmental effects identified in this SED, and would have greater potential to increase the environmental effects.

Since USEPA's TMDLs do not include an implementation plan, and therefore do not include a compliance schedule, compliance with discharge requirements and the USEPA's TMDLs is expected to be achieved immediately. Since such immediate compliance is generally infeasible, the Regional Board would likely be compelled to issue enforcement orders to provide time for dischargers to come into compliance. This would not alleviate the potential environmental effects of the implementation of reasonably foreseeable methods of compliance, but merely extend the allowable period for tasks and schedules of implementation.

## **5.2 Modified TMDLs and Action Plans, Modified Regulatory Approach**

Regional Board staff's updated Metals Impairment Assessment (see Staff Report, Section 4) identified impairment due to Cu, Zn, Hg, As and Cr in Newport Bay. Board staff carefully considered the appropriate regulatory tools to address each of these metals impairments, whether by TMDL(s) or an alternative restoration approach that is consistent with USEPA's new Vision Framework for addressing impaired waters on the Clean Water Act Section 303(d) list.

Based on the Impairment Analysis, Board staff concluded that Cu impairment could and should be addressed through TMDLs. Zn, Hg, As and Cr should be addressed with Action Plans for the following reasons: Zn and Hg impairment in sediments could and should be addressed with the removal of sediments impaired due to Cu (required in the Cu TMDLs); and, a comprehensive source analysis is needed for As and Cr before

TMDLs can be developed.. Accordingly, Action Plans are being recommended for these metals.

Board staff also considered various alternatives for the calculation of the Cu TMDLs and allocations, taking into account information concerning the numbers and sizes of boats in the Bay, leach rates of Cu AFPs, etc.

Board staff believe that in each case, the recommended Cu TMDLs and Zn, Hg, As and Cr Action Plans are the most scientifically and technically defensible approach. Future refinements to the TMDLs and Action Plans are expected as data and information are collected during implementation. Such data and information may result in future recommendations to replace one or more Action Plans with TMDLs, and/or to implement alternative Action Plans.

## **5.2 Recommended Alternative**

The recommended alternative is the adoption of the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans evaluated in this SED. As stated in Section 5.2, the proposed TMDLs and Action Plans themselves reflect extensive consideration of alternatives, including allocation approaches, implementation strategies, and compliance schedules. As discussed above, the environmental effects of the implementation of reasonably feasible methods of compliance with the proposed TMDLs and Action Plans are expected to be less than significant when standard, available mitigation measures are required and implemented during task implementation. In addition, the proposed TMDLs and Action Plans would require less reduction of Cu loads from Cu AFPs on boat hulls (83%) compared to the USEPA's Cu TMDLs (92%), *and* no allocations are required by the Zn, Hg, As and Cr Action Plans.

If the Regional Board does not adopt the proposed Cu TMDLs and Zn, Hg, As and Cr Action Plans (the no action alternative), implementation of the 2002 USEPA Cu, Cd, Zn and Pb TMDLs would be required. USEPA's TMDLs were based on an impairment assessment by USEPA that evaluated data older than that used in Board staff's Metals Impairment Assessment, and USEPA also used sediment guidelines that are not used by State and Regional Boards to determine impairment.

For Newport Bay, USEPA's TMDLs rely on the saltwater CTR criteria for dissolved metals, and TELs and toxicity to determine sediment impairment. In the current Impairment Assessment, the saltwater CTR criteria for dissolved metals is still used to determine impairment in water; however, ERMs rather than TELs are used to determine sediment impairment. This resulted in no sediment impairment for Cd or Pb, and USEPA's TMDLs for Cd and Pb should be depromulgated. In addition, sediment impairment for Zn was only found in limited parts of the Lower Bay, but not in the Upper Bay, and this impairment should be remediated when sediment Cu is remediated by tasks required in the Cu TMDLs; therefore, USEPA's Zn TMDLs should also be depromulgated.

In addition, the recommended TMDLs and Action Plans reflect the best available science concerning appropriate numeric targets, that, when attained, will ensure the protection of beneficial uses. For these reasons, reliance on USEPA's Cu, Cd, Zn and Pb TMDLs is no longer scientifically defensible and has the potential to result in unnecessary implementation of tasks and schedules that will use limited resources to achieve unnecessary requirements. This is not in the public interest.

DRAFT