Substitute Environmental Document (SED)

for

Proposed Basin Plan Amendment

for

Total Maximum Daily Loads (TMDLs) for Copper (Cu) in Newport Bay, Orange County, California

Santa Ana Regional Water Quality Control Board

October 25, 2022

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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 - NOAA)
ERM – Effects range median (sediment guideline - NOAA)
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 (Santa Ana Water Board)
SCAQMD – South Coast Air Quality Management District
SED – Substitute environmental document
SHEL – Shellfish harvesting
SIP – State Implementation Plan
SMW – State Mussel Watch
SPWN – Spawning, reproduction, and development
SQOs – Sediment Quality Objectives
SSO – Site-specific objective
SWAMP – Surface Water Ambient Monitoring Program

SWRCB – State Water Resources Control Board (State Water Board)
TEL – threshold effects level (sediment guideline)
TMDL – Total maximum daily load
TOC – total organic carbon
TSO – Time schedule order
TSS – total suspended solids
$\mu g/cm^2/d$ – micrograms per centimeter^2 per day (leach rate)
USEPA – United States Environmental Protection Agency
USFWS – United States Fish and Wildlife Service
WILD – Wildlife habitat
WLA – Wasteload allocation

INTRODUCTION

The California Regional Water Quality Control Board Santa Ana Region (Santa Ana Water Board) proposes to amend the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to incorporate Copper (Cu) Total Maximum Daily Loads (TMDLs) for Newport Bay (Proposed Project).

As described in detail in Section 1.1, the Santa Ana Water Board is required to comply with the California Environmental Quality Act (CEQA) when considering amendments to the Basin Plan as an exempt regulatory program. Accordingly, this Substitute Environmental Document (SED), which includes an Environmental Checklist (Checklist), analysis of the findings in the Checklist, the Staff Report 2022 (Appendix A), and responses to comments received (Appendix B), has been prepared to address the potential environmental effects of the Proposed Project.

In 2002, USEPA established TMDLs for copper (Cu), lead (Pb), zinc (Zn) and cadmium (Cd) in the Upper Bay, and Cu, Pb and Zn in the Lower Bay based on an impairment assessment conducted by USEPA (USEPA, 2002[1]). In 2006, the State Water Resources Control Board (State Water Board) assessed individual metals in Newport Bay and listed the Upper and Lower Bay for Cu on the 303(d) list of Impaired Waters. No other individual metals were listed based on the State Water Board's assessment. The State Water Board's assessment also demonstrated no metals impairment in San Diego Creek. These 2006 findings with regard to metals impairment in Newport Bay and San Diego Creek were confirmed in subsequent 303(d) lists of Impaired Waters approved by the State Water Board and USEPA (2010, 2012, 2014-2016).

The Impairment Assessment (Section 4 Staff Report 2022 (Appendix A)) conducted by Santa Ana Water Board staff to support the development of the proposed Basin Plan amendments evaluated data more recent than those used by USEPA, as well as updated sediment and tissue guidelines. Santa Ana Water Board staff's assessment also relied upon the newer listing methodology specified in the State Board's *Water Quality Control Policy for Developing California's Section 303(d) List (2004, as amended in 2015).* Santa Ana Water Board staff's Impairment Assessment found water column impairment due to Cu.

Santa Ana Water Board staff's Impairment Assessment found water column impairment for Cu in both the Upper and Lower Bay, confirming that Cu TMDLs are necessary. Water Board staff's Impairment Assessment also found exceedances of the sediment ERMs for Cu, Zn and Hg, and fish/mussel tissue guidelines for Zn, As and Cr. These findings demonstrate that additional monitoring and investigation of these metals are warranted.

If these Basin Plan amendments are approved, Copper (Cu) TMDLs would be adopted and implemented. If approved by USEPA, these Cu TMDLs for Newport Bay will supersede USEPA's Cu TMDLs for Newport Bay.

[1] Total Maximum Daily Loads for Toxic Pollutants, San Diego Creek and Newport Bay, California. U.S. Environmental Protection Agency, Region 9, 2002.

While USEPA's Metals TMDLs do not include an implementation plan or compliance schedule, actions are already required (and some actions have been taken by the Santa Ana Water Board and dischargers) to implement and achieve USEPA's TMDLs. This includes the issuance of National Pollutant Discharge Elimination System (NPDES) permits by the Santa Ana Water 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 above, dischargers have implemented a variety of tasks and projects to address metals in the watershed in response to these permit requirements.

The Proposed Project is described in detail in Section 5 of the Staff Report 2022 (Appendix A) and delineated in the recommended Basin Plan amendments.

The draft Basin Plan amendments, draft resolution, and this draft SED and Appendices (Staff Report 202**2**~~1~~ and Response to Comments documents) will be available on the Santa Ana Water Board's FTP site at https://ftp.waterboards.ca.gov/WebInterface/login.html.

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A summary of the Proposed Project is provided in Section 2 of this SED.
Section 3 describes the Environmental and Regulatory Setting for the Proposed Project.
Section 4 includes a discussion of Reasonably Foreseeable Methods of Compliance with the Cu TMDLs, the Environmental Checklist and Analysis of the Findings in the Checklist.
Section 5 includes a discussion of Alternatives to the Proposed Project.
Section 6 includes a discussion of Economics.
Section 7 summarizes Known Areas of Controversy and Unresolved Issues
Section 8 includes Findings and Statement of Overriding Considerations.

Based on the analysis of the findings in the Checklist, the implementation of the reasonably foreseeable methods of compliance with the proposed Cu TMDLs may have *potentially significant impacts* on the environment, but these impacts can be controlled with available mitigation measures that are not within the Santa Ana Water Board's authority to require. The mitigation measures, however, can and should be implemented by local agencies as site-specific projects are implemented. The goal of the Proposed Project is to improve and protect water quality and beneficial uses in Newport Bay.

1.1 REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS OF THE BASIN PLAN AMENDMENT TO INCORPORATE NEWPORT BAY COPPER TMDLS

Pursuant to Public Resources Code section 21080.5, subdivision (c), 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.[2]

The State Water Board's regulations for implementation of CEQA for exempt regulatory programs (CCR, Title 23, §§ 3775-3781) set forth the exclusive procedural requirements for basin plan amendments. These regulations require early public consultation (Section 1.1.1) and the preparation of an 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(s);

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.[3]

[2] CEQA Guidelines, §15252, subd. (a).

[3] Cal. Code. Regs., tit. 23, § 3777, subd. (b).

In preparing the environmental analysis of reasonably foreseeable methods of compliance, the Santa Ana Water Board may utilize numerical ranges or averages where specific data are not available; however, the Santa Ana Water 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 Santa Ana Water 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 section 15091, and, if applicable, a statement of overriding considerations as described in CEQA Guidelines section 15093.

The environmental analysis for the Basin Plan amendment must also comply with Public Resources Code section 21159 and CEQA Guidelines section 15187. These provisions set forth requirements for rules and regulations requiring the installation of pollution control equipment, establishment of performance standards[4], and establishment of a treatment requirement by the State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (among other agencies).[5] An environmental document prepared under a certified exempt regulatory program satisfies the requirements of section 15187 if it includes 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

[4] The term "performance standard" is not defined in CEQA but in the rulemaking provisions of the Administrative Procedure Act (Government Code, §§ 11340–11361). A "performance standard" is a regulation that describes an objective with the criteria stated for achieving the objective. (Government Code, § 11342.570)[5] The proposed Basin Plan amendment involves the adoption of Copper (Cu) TMDLs for both Upper and Lower Newport Bay and includes an Implementation Plan to achieve those TMDLs. As such, the TMDLs would establish performance standards. Therefore, this environmental analysis must comply with CEQA Guidelines section 15187.

[6] Cal. Code of Regs., tit. 23, § 3777, subd. (c); see also Pub. Res. Code § 21159, subd. (d); CEQA Guidelines § 15187, subds. (d)–(e).

3. An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation, which would avoid or eliminate the identified impacts.

Under the State Water Board's regulations, these analyses must be included in a SED. 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.[6]

A TMDL is an informational tool and does not, by itself, prohibit any conduct or require any actions.[7] TMDLs must be implemented through waste discharge requirements and other orders. Pursuant to Water Code section 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, the dischargers subject to orders that implement the provisions of the proposed Basin Plan amendment will be responsible for identifying compliance strategies. Public agency dischargers and any public agency with discretionary approval authority for the identified implementation actions will be responsible for conducting any required CEQA analysis for the 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 SED analyzes the potential environmental effects of implementing reasonably foreseeable methods of compliance on a programmatic level. In this respect, the SED provides a framework within which later activities to be implemented at a project-level can be evaluated. (Pub. Resources Code, § 15168, subd. (c)). Consistent with CEQA and the State Water Board's regulations 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, complete, and good faith efforts at full disclosure (CEQA Guidelines, § 15151). Nor does disagreement among experts make an SED inadequate as long as the main points of disagreement are summarized (CEQA Guidelines, § 15151).

[6] Cal. Code of Regs., tit. 23, § 3777, subd. (c); see also Pub. Res. Code § 21159, subd. (d); CEQA Guidelines § 15187, subds. (d)–(e).

[7] *City of Arcadia v. State Water Resources Control Bd.* (2006) 135 Cal.App.4th 1392, p. 1414.

This SED is intended to satisfy the standards for adequacy delineated in the State Water Board's regulations for exempt regulatory programs, applicable provisions of CEQA and the CEQA Guidelines, and applicable case law.

In this SED, the Santa Ana Water Board has made a good faith effort at full disclosure of the reasonably foreseeable environmental impacts that could accompany the Proposed Project and the implementation of the reasonably foreseeable methods of compliance with the Proposed Project. Pursuant to applicable requirements, the Santa Ana Water Board staff made the draft SED, Staff Report 2022 (Appendix A), Responses to Public Comments (Appendix B), and the proposed Basin Plan amendment available to the public for comment on June 29, 2021.

The SED, which includes the Staff Report 2022 (Appendix A) and Response to Comments documents (Appendix B, (B1-5)), the Basin Plan amendment and Resolution are available on the Water Boards FTP site at https://ftp.waterboards.ca.gov/WebInterface/login.html.

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These documents are considered as a whole when evaluating the environmental impacts of implementing the Proposed Project.

1.1.1 CEQA Scoping Meetings, Santa Ana Water Board Presentations, and Other Public Participation

In accordance with the State Water Board's regulations for the implementation of CEQA (Cal. Code Regs., title 23, § 3775.5), Santa Ana Water Board staff conducted two CEQA scoping meetings on July 23, 2015, and an informational presentation at the Santa Ana Water Board meeting on July 24, 2015, to initiate public participation in the development of the draft SED. Prior to those meetings, a notice of the CEQA scoping meetings was sent to potentially interested and affected parties. Input from all stakeholders and interested parties was solicited at these meetings and at the Santa Ana Water Board meeting for consideration in the development of the SED.

During the CEQA scoping meetings, Santa Ana Water Board staff identified and discussed the regulatory basis for TMDLs, including applicable statutory and regulatory requirements; the Metals TMDLs for Newport Bay established by USEPA in 2002; and the proposed Cu TMDLs. (Proposed Zn, Hg, As and Cr Action Plans that were being considered by Water Board staff at that time were also discussed. These Action Plans are no longer part of the Proposed Project.)

Santa Ana Water Board staff also described a number of reasonably foreseeable methods of compliance with the TMDLs (and Action Plans) These reasonably foreseeable compliance methods included actions to: 1) decrease Cu discharges from Cu antifouling paints (AFPs) on boats; 2) continue to meet Cu allocations for tributary and storm drain runoff; 3) monitor and evaluate sediment Cu (and Zn and Hg) using the Sediment Quality Objectives (SQOs)

assessment methodology[8] in marinas and areas that formerly exceeded the sediment ERM guidelines, and in marina areas that have not been monitored; and, 4) address Zn exceedances in fish tissue; and, 5) address As and Cr fish/mussel tissue impairment.

A Santa Ana Water Board hearing to consider adoption of the proposed Cu TMDLs (and then-proposed Action Plans for other metals) was set for October 28, 2016; Santa Ana Water Board staff published a Notice of Public Hearing/Notice of Filing, a Draft Basin Plan Amendment, a Draft Staff Report 2016, and a Draft SED on August 30, 2016. Due to the extensive and comprehensive comments submitted to the Santa Ana Water Board, the adoption hearing was changed to a workshop and the Cu TMDLs and Metals Action Plans were presented as informational items to the Santa Ana Water Board on October 28, 2016. Many stakeholders presented their concerns. All relevant documents, including written comments, were made available to the public. Responses to comments received before and during the October 28, 2016 public workshop have been prepared and are included as Appendices B-1a and B-1b of this SED.

An adoption hearing was then scheduled for October 19, 2018, and Santa Ana Water Board staff published a Notice of Public Hearing/Notice of Filing, Revised Draft Basin Plan Amendment, a Supplemental Staff Report, and a Revised Draft Substitute Environmental Document on July 10, 2018. Santa Ana Water Board staff's written responses to original comments received were posted to the Board's website on September 27, 2018. The adoption hearing was cancelled (based on stakeholder input) to conduct public workshops on the proposed Basin Plan amendments. Responses to comments received prior to the cancelled October 19, 2018 public hearing have been prepared and are included as Appendix B-2 of this SED.

Santa Ana Water Board staff conducted two additional public workshops on May 9 and 10, 2019. Responses to the workshop comments provided have been prepared and are included as Appendix B-3 of this SED.

Another adoption hearing was then scheduled for September 17, 2021. Santa Ana Water Board staff published a Notice of Public Hearing/Notice of Filing, a revised Draft Basin Plan Amendment, and a revised Draft Substitute Environmental Document, which included a revised Staff Report (Appendix A to the SED, dated June 29, 2021). On July 1, 2021, the public notice was amended to revise the end of the public comment period on the revised documents from 5 p.m. on August 13, 2021, to August 16, 2021. Subsequently, the Santa Ana Water Board adoption hearing scheduled for September 17, 2021, was changed to a workshop. The deadline for submittal of written comments on the proposed Basin Plan amendments was extended to 5 p.m. on August 30, 2021. Written responses to the comments received by the August 30, 2021 deadline and to the oral comments received during the workshop are included in Appendix B-4of this SED.

[8] State Water Resources Control Board (SWRCB). 2018. Water Quality Control Plan for Enclosed Bays and Estuaries – Sediment Quality Provisions.

Following the September 17, 2021 workshop, the County of Orange and the City of Newport Beach requested an opportunity to propose an alternative Implementation Plan for the proposed TMDLs. The Santa Ana Water Board granted that request and a proposal was submitted by the County, on behalf of the County, the City of Newport Beach, and other dischargers on January 28, 2022. The proposal included two documents: a "Proposed Alternative Implementation Plan" and "Supplemental Fact Sheet Language for the Proposed Alternative Implementation Plan". Santa Ana Water Board staff reviewed this documentation and found that it was not acceptable since it would not meet the fundamental purpose of correcting water quality impairment due to Cu and achieving water quality standards in the Bay within a reasonable timeframe (Appendix B-5).

Further revisions of the proposed Basin Plan Amendment, the SED, and the Staff Report were made to address comments received. The revised proposed Basin Plan Amendment, and the revised SED 2022 (including the Staff Report 2022 and the Response to Comments documents) will be made available for public review via the Water Board's ftp site at least 30 days prior to the Santa Ana Water Board hearing on this matter. No written public comments on these documents will be accepted; however, oral comments at the public hearing will be allowed.

2.0 PROJECT DESCRIPTION

The Santa Ana Water Board proposes to amend the Basin Plan to incorporate Copper (Cu) TMDLs for Newport Bay. (Action Plans for Zn, Hg, As and Cr in Newport Bay are no longer being considered as part of the Proposed Project.) The goals of these Cu TMDLs are:

1) To achieve established, applicable narrative and numeric water quality objectives and thereby correct impairment in waters due to Cu;

2) To monitor and evaluate sediment Cu in Lower Newport Bay and lower Upper Newport Bay using the Sediment Quality Objectives assessment (Sediment Quality Provisions). The results will be used to determine whether additional action is needed to achieve established, applicable narrative and numeric objectives and thereby ensure the protection of beneficial uses in Newport Bay; and,

3) To review the 2002 USEPA Cu TMDLs and identify appropriate revisions and recommendations based on newer data, as well as to consider an appropriate implementation plan for these Cu TMDLs.

If approved by USEPA, the proposed Cu TMDLs will supersede the Cu TMDLs established by USEPA in June 2002. If the proposed Cu TMDLs are not adopted, then USEPA's TMDLs for Cu must continue to be implemented. The USEPA TMDLs include higher reductions for Cu discharges from boats (92% compared to 60% in the proposed Cu TMDLs).

As noted above, actions are already required and have been taken to implement and achieve USEPA's Cu (and other metals) TMDLs. This includes the issuance of National Pollutant Discharge Elimination System (NPDES) permits by the Santa Ana Water 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.

Orange County's municipal separate storm sewer system (MS4) permit (Orange County MS4 Permit, Order No. R8-2009-0030, NPDES CAS618030, as amended by Order No. R8-2010-0062) for tributary runoff includes requirements for metals, and tributary runoff is a source of metals to the Bay. Dischargers have implemented a variety of tasks and projects to address metals in the watershed in response to these permit requirements. These include BMPs (e.g., dry weather diversions, sediment controls) and metals monitoring. Once the proposed Cu TMDLs are approved and become effective, the Santa Ana Water Board will amend existing permits and issue new permits as appropriate to implement the requirements of the TMDLs. Actions already taken or underway to address metals inputs and metals monitoring are expected to continue under these new/revised discharge requirements.

Other actions already taken include the assessment of metals in a subset of marinas in the Lower Bay (Cu-Metals Marina Study[9]); the assessment of sediment metals in post-dredged areas (and a few marinas) in the Lower Bay (Lower Bay Metals Sediment Study[10]); and the Cu Reduction Project[11] in a target marina in the Lower Bay to convert boats from Cu to non-biocide AFPs.)

The potential effects of the adoption and implementation of the proposed Cu TMDLs are evaluated in this SED.

The proposed Cu TMDLs include:

(1) Numeric targets for dissolved Cu in water equivalent to the California Toxics Rule (CTR) saltwater chronic and acute criteria;
(2) A numeric target for sediment Cu (Effects Range Low -ERL) from established sediment guidelines from NOAA (NOAA SQuiRTS 1999, amended 2008)); and an alternative sediment target based on the Sediment Quality Objectives (SQOs) methodology (per the State Water Board's Water Quality Control Plan for Enclosed Bays and Estuaries of California –Sediment Quality Provisions[12];
(3) Total maximum daily loads for Cu discharges into Newport Bay;
(4) Wasteload and load allocations for point source and nonpoint source inputs of Cu to the Bay;
(5) An Implementation Plan (tasks and schedules) to achieve the dissolved Cu numeric targets**,** the sediment numeric or alternative SQOs target**,** and TMDL allocations. The

[9] Orange County Coastkeeper and L.M. Candelaria. July 2007. Lower Newport Bay Copper-Metals Marina Study. Report for Santa Ana Regional Water Board.

[10] Orange County Coastkeeper and L.M. Candelaria. March 2014. Metals Sediment Study in Lower Newport Bay (Post-dredging) Final Report. Report for Santa Ana Regional Water Board

[11] Orange County Coastkeeper. March 2013. Newport Bay Copper Reduction Study. Report for Santa Ana Regional Water Board.

[12] State Water Resources Control Board (SWRCB). 2018. Water Quality Control Plan for Enclosed Bays and Estuaries – Sediment Quality Provisions.

Implementation Plan includes requirements for the dischargers to develop and implement, upon approval, their own implementation plan(s) to achieve the TMDLs, and to continue to monitor and evaluate water and sediments. Sediment quality conditions are to be assessed per the Sediment Quality Objective methodology prescribed by the Sediment Quality Provisions.

(6) The goal for these Cu TMDLs is compliance with the dissolved Cu CTR chronic criterion. In accordance with this goal, compliance with the Cu TMDLs will be considered to be achieved if the dissolved Cu CTR criterion (3.1 µg/L) is achieved, (i.e., no impairment is demonstrated per the assessment methodology in the State Listing Policy (SLP)) and no further reduction in Cu discharges will be required, even if the Cu allocation for boats is not achieved. If, however, the Cu allocation for boats is achieved, but the CTR criterion is not achieved, it is likely that further reduction in Cu discharges from Cu antifouling paints (AFPs) will be required. Such further reduction would be required pursuant to the revised TMDLs. Note that Cu AFPs continue to be the main source of Cu to the Bay.

USEPA's 2002 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 or reference TMDLs contained in separate documents in 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 and schedule. The proposed amendments include an Implementation Plan for the Cu TMDLs and, thus, fulfill this obligation.

The proposed Cu TMDLs, including the Implementation Plan (tasks and schedules), were developed through scientific and technical inquiry with USEPA, US Fish and Wildlife Service (USFWS), and with input from stakeholders, including the City of Newport Beach (the City) and the County of Orange (the County), and other active participants, including Orange County Coastkeeper and other environmental organizations. The proposed Cu TMDLs also include scientific and technical input from the US Navy, Department of Pesticide Regulation (DPR), and the Statewide Marina Workgroup (that includes the State Water Board and other regional water quality control boards, the Port of San Diego, Orange County Coastkeeper, DPR, California Coastal Commission (CCC), and others). These efforts are documented in the Staff Report 202**2**~~1~~(Appendix A of this SED).

The Implementation Plan for the Cu TMDLs is described in greater detail in Section 4 of this document (and in the Basin Plan Amendment and Staff Report 2022 (Appendix A)). Section 4 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[13] 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.[14]

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 includes Reach 1, which receives flows from Peters Canyon Wash as well as Barranca, Lane, San Joaquin, and Sand Canyon Channels, and Reach 2, which receives flows from 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 (85%) of freshwater flow into Upper Newport Bay, followed by Santa Ana-Delhi Channel (~5%).[15] The table below summarizes the drainage areas of the major tributaries.

[13] Orange County has renamed this watershed as the Newport Bay watershed.

[14] USEPA Toxics TMDLs for San Diego Creek and Newport Bay, 2002.

[15] US Army Corps of Engineers (ACOE). 2000. Upper Newport Bay Ecosystem Restoration Feasibility Study: Environment Impact Statement/Report. Final Report, September.

Drainage Areas of the Newport Bay Watershed*

Tributary	Drainage Area (acres)	Drainage Area (%)
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 and 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[16]. The most dramatic change to the watershed occurred when San Diego Creek was channelized in the early 1960s. The channelization 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 such as Ridgway's Rail, the California Least Tern, Least Bell's Vireo, and Belding's Savannah Sparrow (which is listed as endangered by the state). Upper Newport Bay is also a Marine Protected Area (MPA).

Several sediment basins are found in the Upper Bay and are periodically dredged by the Army Corps of Engineers (ACOE). The last major sediment dredging and restoration project in Upper Newport Bay was conducted in 2006–2010 (Upper Newport Bay Ecosystem Restoration Project).

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 the 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 the Upper Bay included water skiing, commercial and sport fishing (although limited fishing occurs presently), shellfish harvesting, preservation of rare and endangered species, marine habitat and recreation, including kayaking, boating and bird watching.

[16] Source: Orange County Department of Public Works, provided May 2014.

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 5,000 boats/slips, and approximately 5 boatyards. Divers perform underwater hull cleaning for most of these boats, which results in Cu discharges to Bay waters; Cu is also discharged to Bay waters from passive leaching of Cu-based antifouling paints. Boatyards also provide cleaning and re-painting services. 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 Santa Ana Water Board identified the Rhine Channel as a toxic hotspot based on previous investigations (BPTCP 1997), and this channel was dredged in 2011. West Newport Bay and the Turning Basin areas also tend to have low tidal flushing and accumulate pollutants in waters and sediments.

Like Upper Newport Bay, sedimentation in Lower Newport Bay requires periodic dredging to maintain navigational depths. Federal channels are maintained by the US Army Corps of Engineers (USACOE), with support from the City of Newport Beach and the County of Orange. The remainder of the Bay is managed and maintained by the City and the County. Dredging projects range in scope and complexity. Small scale projects, such as the dredging of individual boat owner's slips, occur routinely. The implementation of large-scale projects, such as the USACOE dredging of federal navigational channels, is more complex and the location, timing and scope significantly more uncertain, given the need to assure adequate funding, the variability of pollutant concentrations in the dredged materials, and the availability of suitable dredged material disposal sites.

Major dredging of navigational channels in Lower Newport Bay was conducted in 2012-2014 by the USACOE (Lower Newport Bay Dredging Project – Phases I and II). Dredging of the Newport Bay entrance channel to maintain navigational depths is expected to be completed in July 2021. Dredging of the main navigational channels in Lower Newport Bay is again being planned; however, the timing and scope of this project remains to be determined, largely due to high pollutant concentrations in some of the sediments in the channels and the need to identify suitable dredged material disposal options in these areas.

The entire Newport Bay up to a maintained basin (Basin 1) in Reach 1 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 USEPA's Toxics TMDLs. For storm events, flows may be as high as 8000 cfs. San Diego Creek contains 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 as high as 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. The Lower Bay is

dominated by saline waters (30 to 35 parts per thousand (ppt)) due to twice-daily ocean tides which enter the Lower Bay via the Newport jetty entrance.

The actions identified in the Implementation Plan for the proposed Copper (Cu) TMDLs are intended to: 1) reduce Cu in Bay waters; 2) monitor Cu in sediments; and 3) 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 Santa Ana Water Board's Basin Plan and are shown in the table below.

A more detailed description of the watershed is provided in Sections 1.1 & 1.2, Staff Report 2022 (Appendix A to this SED).

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

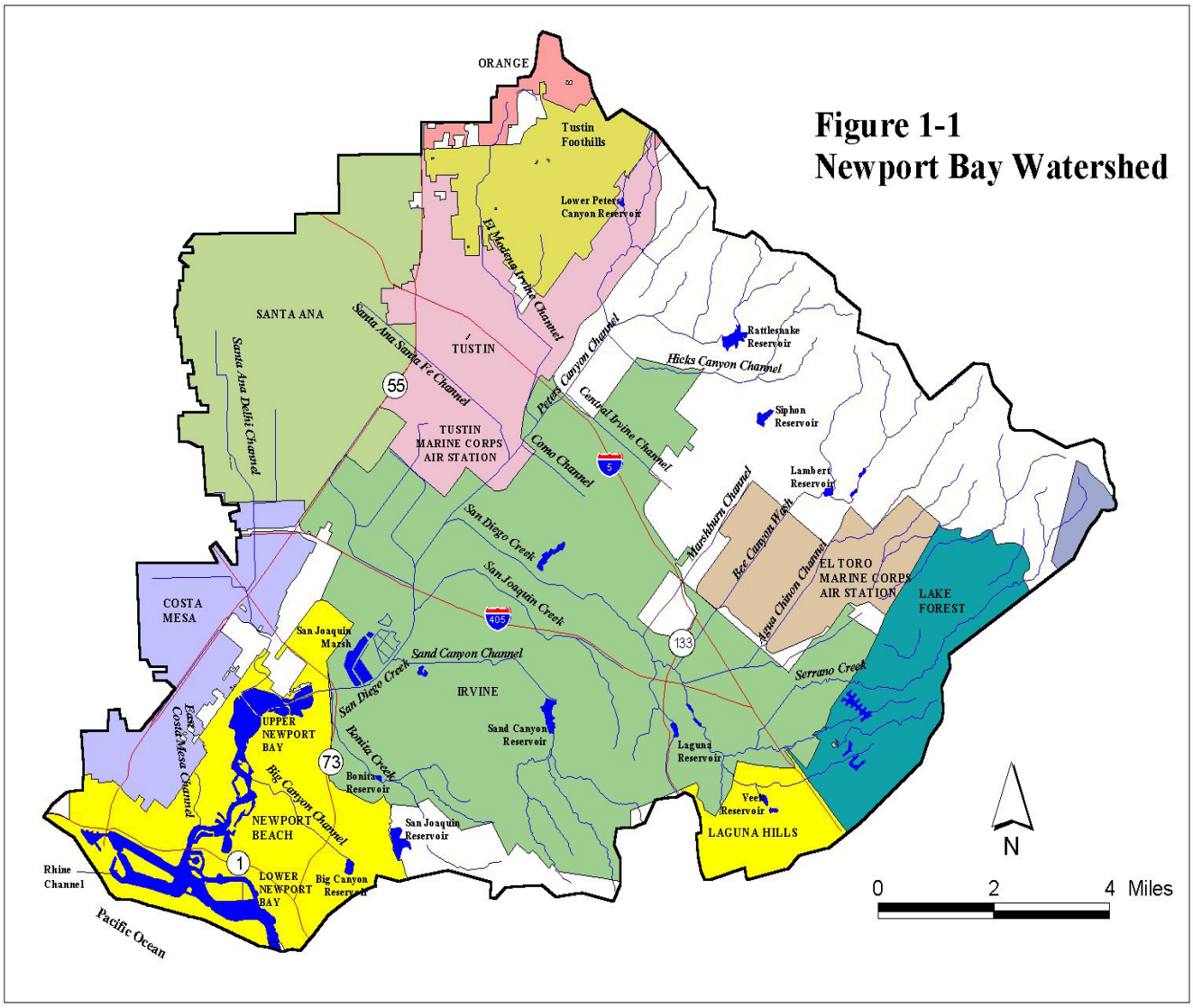
Figure 1-1
Newport Bay Watershed
ORANGE
Tustin Foothills
Lower Peters Canyon Reservoir
El Modena Irvine Channel
SANTA ANA
Santa Ana Santa Fe Channel
Santa Ana Delhi Channel
TUSTIN
55
TUSTIN MARINE CORPS AIR STATION
Peters Canyon Channel
Central Irvine Channel
Como Channel
Rattlesnake Reservoir
Hicks Canyon Channel
Siphon Reservoir
Lambert Reservoir
Marshburn Channel
Bee Canyon Wash
Agua Chinon Channel
EL TORO MARINE CORPS AIR STATION
LAKE FOREST
San Diego Creek
San Joaquin Creek
COSTA MESA
San Joaquin Marsh
Sand Canyon Channel
405
133
Serrano Creek
IRVINE
East Costa Mesa Channel
UPPER NEWPORT BAY
Bonita Creek
73
Sand Canyon Reservoir
Laguna Reservoir
Big Canyon Channel
Bonita Reservoir
Veeh Reservoir
NEWPORT BEACH
San Joaquin Reservoir
LAGUNA HILLS
1
LOWER NEWPORT BAY
Big Canyon Reservoir
Rhine Channel
Pacific Ocean
N
0
2
4 Miles

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 (303(d) lists). 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 for which the surface waters are or may be used, 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,[17] which is incorporated in the Basin Plan by reference.

The CWA requires that states establish priority rankings for waters on the 303(d) lists and develop TMDLs for these waters. A TMDL is the maximum amount of a pollutant, such as Cu, that a water body can receive and still 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.[18]

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 establish the TMDL for that water body.

The elements of TMDLs are described in federal law and regulations (CWA § 303(d) and 40 C.F.R. §§ 130.2; 130.7). TMDLs must account for seasonal variations in water quality and include a margin of safety 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 are assigned to point sources and load allocations 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 Santa Ana Water Board that incorporates the TMDL(s) along with a new or revised program of implementation designed to meet the TMDL(s)) but can also be established through a single regulatory action (e.g., waste discharge requirements or a clean and abatement order). TMDLs established through the Basin Planning process are not self-implementing (see Section 1.1., above).

On October 31, 1997, USEPA entered into a consent decree in *Defend the Bay, Inc. v. Marcus,* (N.D. Cal. No. C 97-3997 MMC) (consent decree), which established a schedule for development of TMDLs in San Diego Creek and Newport Bay. The consent decree required the State to develop TMDLs for multiple toxic pollutants by January 15, 2002. The consent decree also provided that USEPA would establish the required TMDLs within ninety (90) days if the State failed to establish TMDLs by the deadline. The State did not meet the deadline. In early

[17] http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf

[18] "A New Long-Term Vision for Assessment, Restoration and Protection under the Clean Water Act Section 303(d) Program", USEPA, December 5, 2013.

April 2002, the consent decree was modified to extend the deadline for USEPA to establish these TMDLs to June 15, 2002.[19]

Relying in part on work completed by Santa Ana Water Board staff, USEPA established the Toxics TMDLs for San Diego Creek and Newport Bay (including TMDLs for Cu and other metals) in June 2002. The TMDLs were designed to attain the water quality objectives[20] for Cu, Cd, Zn and Pb, and other specified toxic pollutants in the Newport Bay and San Diego Creek and were prepared pursuant to federal requirements to attain water quality standards. The Toxics TMDLs did not include an implementation plan as implementation plans are required by state law, not federal law.

The Proposed Project is the adoption and implementation of a Basin Plan amendment to incorporate Cu TMDLs for Newport Bay (revised from USEPA's Cu TMDLs). The TMDLs include a proposed Implementation Plan (including tasks and schedules) to meet the numeric targets and allocations for Cu.

Upon approval by the State Board and Office of Administrative Law (OAL) of the proposed Basin Plan amendment, the amendment will be forwarded to USEPA for review and approval. If USEPA approves the State-approved Cu TMDLs, the revised Cu TMDLs will supersede USEPA's Cu TMDLs.

[19] Total Maximum Daily Loads for Toxic Pollutants, San Diego Creek and Newport Bay, California. U.S. Environmental Protection Agency, Region 9, 2002.

[20] 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 and Analysis for the Proposed Project and the reasonably foreseeable methods of compliance and identifies the potential adverse environmental impacts of implementing the Proposed Project. This Checklist considers the potential impacts of the reasonably foreseeable methods of compliance with the Proposed Project identified in Section 4.1. Analysis of the Checklist findings, reasonably foreseeable alternatives, reasonably foreseeable mitigation measures, and conclusions regarding the level of potential environmental impact are presented in Section 4.2.

As described in Section 1.1., the Santa Ana Water Board is prohibited from specifying the design, location, type of construction, or particular manner of compliance with its orders. Instead, the dischargers subject to orders issued by the Santa Ana Water Board to implement the proposed Basin Plan amendments will be responsible for identifying compliance strategies. Any required CEQA analysis of the implementation of the selected strategies at the project level must be carried out when the dischargers determine the manner in which they will comply with the Proposed Project. 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. Accordingly, the reasonably foreseeable methods of compliance are analyzed at a programmatic level and discussed below.

4.1 Implementation Plan for Cu TMDLs: Reasonably Foreseeable Methods of Compliance

The Implementation Plan requires the Santa Ana Water Board to issue, reissue, or amend the appropriate orders to implement the Cu TMDLs to require the dischargers to develop and implement, upon Santa Ana Water Board Executive Officer approval, plans and schedules to:

1. **Reduce Cu discharges from Cu AFPs on recreational and commercial vessels.** Cu discharges from Cu AFPs on boats must be reduced to meet the Cu TMDLs. The Implementation Plan for the Cu TMDLs specified in the proposed Basin Plan Amendment identifies tasks that *must be considered (but are not required to be included)* in the dischargers' implementation plans/schedules. These tasks are considered to be reasonably foreseeable methods of compliance by which the reduction in Cu discharges from boats could be achieved. These tasks include: the use of best management practices (BMPs) during hull cleaning and establishment of a diver education and certification program for underwater hull cleaning; the conversion of Cu AFPs on vessels to lower leach rate Cu AFPs or alternative AFPs; and the development and implementation of boater, marina operator, and boatyard education programs.

2. **Conduct monitoring and evaluation of water and sediments in Bay waters, and tributary and storm drain runoff, to assess current conditions and the efficacy of reduction measures implemented to achieve the TMDLs.** Responsible dischargers will be required to evaluate the monitoring data and submit an annual report. Monitoring and evaluation are requisite elements of any implementation plan to achieve water quality standards.

3. **Conduct source investigations and/or stressor identification studies, if warranted by data collected from the requisite monitoring.**
   Where evaluation of the monitoring data indicates that a source investigation and/or stressor identification study is necessary, the dischargers will be required to submit, and implement upon approval by the Santa Ana Water Board, source investigation and/or stressor identification plans and schedules. Source remediation plans may be required based on the results of the source investigations.

4.1.1 Reduce Cu discharges from Cu AFPs on recreational and commercial vessels

The proposed Cu TMDLs include allocations and targets that require the dischargers to reduce Cu discharges from Cu AFPs on boats so that the dissolved Cu CTR criterion of 3.1 µg/L is achieved. The proposed TMDLs include an extended compliance schedule (as soon as possible but no later than 12 years) with phased reductions of Cu discharges from Cu AFPs. The intent of this approach is to allow time for the implementation of reasonably foreseeable methods of compliance. The following are reasonably foreseeable methods of compliance with this reduction requirement:

(1) Require underwater hull cleaners to use BMPs and develop and implement a diver education and certification program; clean boats on a reduced frequency schedule.

A potential method of compliance to reduce Cu discharges from Cu AFPs on boats is the use of BMPs by divers during hull cleaning (such as the use of soft cloths), and reduced frequency of cleaning. The establishment of a certification/permit procedure for all divers in the use of BMPs for hull cleaning is also a potential method of compliance. The use of soft cloths rather than abrasive pads/materials to clean hulls reduces Cu discharges from AFPs and the frequency of needed repainting. Reduced hull cleaning frequency also reduces discharges of Cu from AFPs that occur during cleaning.

There are no potential environmental impacts associated with the development and implementation of a diver certification/education program and no further analysis of this activity is provided in this SED.

Other hull cleaning BMPs may include the use of hull cleaning container/filter methods, such as the container/filter system that was evaluated in a pilot study in Newport Bay. When employing this method, a boat is cleaned inside a container/slip liner specifically made for hull cleaning. After cleaning, the water inside the container is filtered multiple times to remove pollutants before being returned to the Bay. Particulates and fouling settle to the bottom of the slip liner and are removed, dried and taken to an appropriate landfill. The use of this container/filter system would reduce Cu (and other metals) discharges to the Bay from hull cleaning, which should improve water quality.

(Data are being evaluated for this study.[21] The preliminary analyses show that this filter system appears to remove over 75% of the dissolved Cu and over 90% of the particulate Cu from the container water after hull cleaning. The removal of dissolved Zn from the container water is

[21] Preliminary data analysis for Hull Cleaning study using container/filter system, L.M. Candelaria, SARWQCB, Apr. 2021.

similar to that of Cu. Note that these reductions only refer to the filtered waters from a container after hull cleaning.)

The potential impacts due to the use of BMPs, including the container/filter system for hull cleaning, are evaluated in the Checklist and Analysis below.

(2) Development/Implementation of Education Programs for Boaters, and Boatyards, and Marina Owner/Operators

A potential method of compliance to reduce Cu discharges from Cu AFPs on boats is the development and implementation of education programs for boat owners, and marina and boatyard owner/operators. The purposes of education programs are to: 1) inform the boating community and the public of the Cu water quality problem and possible best management practices (BMPs); 2) build support within the boating community for compliance measures; and, 3) address the problem effectively and thereby improve water quality.

There are no potential environmental impacts associated with the development and implementation of education programs and no further analysis of this activity is provided in this SED.

(3) Conversion of Current Cu AFPs on Boats to Lower Leach Rate Cu AFPs or Non-biocide AFPs, or Non-Cu Biocide AFPs

Lower leach rate Cu AFPs or non-biocide AFPs

Another potential method of compliance to reduce Cu discharges from Cu AFPs on boats is the conversion from current Cu AFPs to lower leach rate Cu AFPs or non-biocide AFPs. Lower leach rate Cu AFPs are now required by DPR (leach rates lower than the 9.5 µg/cm^2/d maximum allowable leach rate)[22]; therefore, boaters may convert from current Cu AFPs to lower leach rate Cu AFPs or convert to non-biocide AFPs. The conversion to non-biocide AFPs may be needed to achieve the TMDLs; the dischargers must consider potential methods to encourage such conversions, but conversions are not required by these TMDLs.

The Port of San Diego and Los Angeles County Department of Beaches and Harbors have conducted separate studies to evaluate the availability and cost-effectiveness of non-biocide alternatives and non-Cu biocide AFPs compared to Cu AFPs.[23,24] The Port of San Diego evaluated non-biocide alternatives to Cu AFPs and concluded that non-biocide AFPs, along with lower leach rate Cu AFPs, are the preferred paints for conversions from higher leach rate Cu AFPs (> 9.5 µg/cm^2/d**)**. Boats may be converted to Cu AFPs with lower leach rates (or to non-biocide AFPs) as part of routine maintenance during the compliance schedule of up to 12 years. This will allow conversions to alternative AFPs as part of the normal repainting schedule of

[22] Department of Pesticide Regulation. 2018. Final Decision Concerning Reevaluation of Copper Based Antifouling Paint Pesticides. CA Notice 2018-03.

[23] San Diego Unified Port District. 2011. Safer Alternatives to Copper Antifouling Paints for Marine Vessels. Final Report –USEPA Project NP00947501-4.

[24] Marina del Rey Pilot Hull Paint Study Final Report, May 2, 2019, Los Angeles County Department of Beaches and Harbors [note: this report summarizes the results of the first phase of the Pilot Study]

boats, rather than requiring immediate conversions from Cu AFPs. The use of lower leach rate Cu AFPs or non-biocide AFPs should reduce Cu discharges to the Bay. The County of Los Angeles also reviewed potential non-biocide AFPs to use in place of Cu and conducted a pilot study using several alternative paints on a number of Sheriff's and Lifeguards boats[25]. Boats painted with CeRam-Kote and Hullspeed had high fouling and were difficult to clean. Sheriff's boats painted with Intersleek could be easily cleaned and boats had increased speed and potential fuel savings. The Department of Ecology for the State of Washington also reported on available non-Cu AFPs, which include non-biocide and non-Cu biocide AFPs.[26] While certain non-biocide AFPs show potential as an effective alternative to Cu AFPs, long-term monitoring and evaluation are needed to assess environmental impacts, durability of the AFPs, maintenance needs (including the frequency of hull cleaning), and life cycle costs as compared to Cu AFPs.

The Department of Ecology issued a follow-up report to the Washington Legislature in 2019[27]. The report noted the limited information available about the environmental effects of non-biocide antifouling coatings, citing the 2017 report prepared by TechLaw and Northwest Green Chemistry as the most in-depth source of information[28]. The Department recommended that the Legislature further delay the ban on the use of Cu AFPs so that the Department could gather more data from paint manufacturers regarding chemicals, leach rates and other relevant information, both for biocide and non-biocide AFPs. The report also describes a number of emerging technologies to replace AFPs, and safer (less potential environmental harm) alternatives to biocidal AFPs. The Department concludes that safer alternatives include the use of dry docks and other fouling-avoidance alternatives. The Department also states that "Also preferable is painting boats with non-biocidal paints and using brushes or other washing systems to remove fouling organisms." This option would avoid the direct chemical effect on water quality and wildlife produced by toxic AFP options.

The potential environmental impacts that may result from the use of non-biocide and/or lower leach rate Cu AFPs are discussed in the Checklist and Analysis below.

Non-Cu biocide AFPs

Although not recommended by Santa Ana Water Board staff, the conversion to non-Cu biocide AFPs, such as Zn or organics, is also a potential method of compliance to reduce Cu discharges from boats. However, the use of these alternative biocide AFPs could result in adverse impacts on the environment since other biocides would be released into the receiving waters. While the use of these biocide AFPs would result in a decrease in Cu concentrations, other toxins would be discharged from the AFPs and could result in a lowering of water quality. In addition, the discharge of other biocides may result in adverse impacts to the biota, including the potential for chronic toxicity effects (e.g., adverse impacts on reproductive success). The

[25] Marina del Rey Pilot Hull Paint Study Final Report, May 2, 2019, Los Angeles County Department of Beaches and Harbors [note: this report summarizes the results of the first phase of the Pilot Study]

[26] Report to the Legislature on Non-copper Antifouling Paints for Recreational Vessels in Washington, Publication 17-04-039, December 2017. Department of Ecology, State of Washington, 2017.

[27] Antifouling Paints in Washington State – Report and Recommendations. *Report to the Legislature Pursuant to SHB 2634 (2018)*. September 2019.

[28] Washington State Antifouling Boat Paint Alternatives Assessment Report. Final Report. 2017.

extent of any such impact would depend on a variety of factors, including the leach rate and toxicity of the non-Cu biocide, the frequency of the application of the biocide AFPs and maintenance practices. Santa Ana Water Board staff would likely not recommend the approval of the dischargers' proposed implementation plan(s) and schedule(s) to meet the requisite reduction for Cu discharges from Cu AFPs if those plans include the use of non-Cu biocide AFPs, unless it can be demonstrated that water quality standards will not be violated (water quality standards include beneficial uses, narrative and numeric water quality objectives, and the state's antidegradation policy).

The potential environmental impacts that may result from the use of non-Cu biocide AFPs are evaluated in the Checklist and Analysis below.

4.1.2. Conduct Monitoring and Evaluation of Bay waters and sediments in the Bay, and tributary and storm drain runoff

Orders issued by the Santa Ana Water Board to implement the proposed TMDLs will require the dischargers to monitor water, sediments and tributary and storm drain runoff, and to evaluate the data and submit an annual report. Monitoring and evaluation are requisite elements of any implementation plan to achieve water quality standards.

The County of Orange, the City of Newport Beach, and marina owners/operators are the key dischargers expected to assume the lead role to implement the proposed Cu TMDLs. The County and the City conduct routine monitoring in the Bay and its tributaries (monitoring required under already established TMDLs for Newport Bay and San Diego Creek) and special investigations (e.g., pre-dredging studies, the City's recent Cu studies). The proposed TMDLs would require additional monitoring for metals in the water column and sediments.

Monitoring activities entail transport to and from sample locations and transport of the samples to the laboratory for analysis. Additional boat and/or vehicular travel may be necessary to implement the proposed metals monitoring requirements. This monitoring can and should be integrated with other ongoing monitoring activities to minimize such travel.

The potential impacts due to increased monitoring are evaluated in the Checklist and Analysis below.

4.1.3. Conduct Source investigations/Stressor Identification Studies if warranted by data collected from the requisite monitoring. The proposed TMDLs, when implemented through appropriate orders, will require the dischargers to conduct source investigations and/or stressor identification studies if warranted by data collected from the requisite monitoring. The need for such investigations is reasonably foreseeable; however, the specific nature, locations and timing are considered speculative. Project-specific CEQA analysis of any proposed source investigation may be required when and if such project(s) are proposed.

Broadly, source investigations and/or stressor identification studies would be expected to require additional, focused monitoring, which could result in increased boat/vehicular travel. *Accordingly, the potential environmental impacts of these activities are considered, to the extent feasible, in the evaluation of the impacts of additional monitoring.*

Summary of Reasonably Foreseeable Methods of Compliance

In short, the reasonably foreseeable methods of compliance evaluated in the checklist and analysis include: 1) the use of BMPs for hull cleaning; 2) the conversion from Cu AFPs to alternative AFPs (non-biocide and lower leach rate Cu AFPs); and 3) the monitoring and evaluation of water and sediment, including monitoring for source investigations and/or stressor identification studies. The checklist and analysis below (Sections 4.2.2 and 4.2.3, respectively) evaluate the potential environmental impacts of these actions on a programmatic level. As previously stated above, the Santa Ana Water Board is not required to conduct a site-specific, project-level analysis of the methods of compliance, nor can it do so. Once again, the Santa Ana Water Board is not required to engage in speculation or conjecture. The recommended Implementation Plan in the proposed Basin Plan Amendment requires the dischargers to identify and implement the specific methods by which they will comply with the TMDLs. Any project-level analysis required under CEQA will be performed by the appropriate lead agency when the dischargers determine the manner in which they will comply.

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 above. 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 the Cu TMDL for Shelter Island (Port of San Diego) and the Toxics TMDL (including Cu) for Marina del Rey (Los Angeles County Department of Beaches and Harbors). 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, where control actions are or may be needed to address metal 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 section 15382 of the CEQA Guidelines 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, the analysis takes into consideration the following:

1. The specific location and nature of all projects and tasks necessary to address impairment due to Cu cannot be determined at this time; therefore, the evaluation of the potential environmental effects of the implementation of reasonably foreseeable methods of compliance is conducted at a programmatic level. As later activities and

specific projects are proposed, the appropriate lead agency must complete any requisite CEQA analysis at the project level.

2. USEPA established Metals TMDLs for Newport Bay, including Cu, Cd, Zn and Pb TMDLs, in 2002. The Santa Ana Water Board and stakeholders have taken and are taking actions, including the implementation of some BMPs in the watershed, in response to waste discharge permits implementing these and other established TMDLs. These actions include implementation of BMPs that provide multiple water quality benefits, including the reduction of metals, sediment, bacteria and other contaminants. These BMPs include dry weather diversions, detention ponds, sediment removal, trash management measures (e.g., street sweeping), and Low Impact Development BMPs (e.g., bioretention, bio-infiltration, rainwater harvest, downspout disconnection). If approved by USEPA, the proposed Cu TMDLs will supersede USEPA's Cu TMDLs. The potential environmental effects of the implementation of the proposed TMDLs are considered in the context of existing requirements (e.g., the Orange County MS4 Permit[29]) for the reduction of Cu, to meet those requirements.

3. The analysis below assumes that the dischargers, including but not limited to the City of Newport Beach and the County of Orange, 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 Storm water Quality Association (CASQA) 2003, California Department of Transportation (Caltrans) 2007 and 2007a).

4. The analysis below also assumes that the dischargers will implement measures to meet the TMDLs that do not result in violations of water quality standards (numeric and narrative objectives, beneficial uses and antidegradation policy requirements).

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 Santa Ana Water Board has analyzed the costs of implementing reasonably foreseeable BMPs to comply with the TMDLs. These economic factors have been considered in this environmental analysis and are summarized below and in Section 8.3, Staff Report 2022 (Appendix A of this SED).

[29] Order No. R8-2009-0030, NPDES CAS618030, as amended by Order No. R8-2010-0062

4.2.2 Environmental Checklist

ISSUES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) 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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions, such as those leading to odors affecting a substantial number of people?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐
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?	☒	☐	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. ENERGY -- Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒
VII. 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.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

VIII. GREENHOUSE GAS EMISSIONS.

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

X. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☒	☐	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would::				
i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
iii) 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; or	☐	☐	☐	☒
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard or seiche zones, risk release of pollutants due to project inundation? ;	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

XI. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
XII. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XIII. NOISE -- Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☐	☒
c) For a project located within the vicinity of a private airstrip or 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?	☐	☐	☐	☒
XIV. POPULATION AND HOUSING -- Would the project:				

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

XV. 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?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XVI. RECREATION

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

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

XVII. TRANSPORTATION/TRAFFIC -- Would the project:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

XVIII. TRIBAL CULTURAL RESOURCES – Would the project:

Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

XIX. UTILITIES AND SERVICE SYSTEMS -- Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) 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?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to substantially 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

4.2.3 Environmental Checklist Analysis

The analysis of potential environmental impacts is based on the alternative means of compliance available for controlling metals in Newport Bay waters in response to the proposed Basin Plan amendment.

Pursuant to section 13360 of the Water Code, the Santa Ana Water Board cannot dictate the compliance measures that dischargers may adopt, or the mitigation measures they would employ to comply with orders issued by the Santa Ana Water Board to implement the Cu TMDLs. However, the Santa Ana Water Board does recommend that appropriate compliance and mitigation measures, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce and, if possible, avoid potential environmental impacts, such that there is a less than significant or no significant impact. These compliance and mitigation measures are discussed below. Since the decision to conduct these measures is strictly within the responsibility and jurisdiction of the implementing agencies, such measures can and should be adopted by these agencies. (California Code of Regulations, tit. 14, § 15091(a)(2).)

Although the Santa Ana Water Board may not mandate the manner of compliance, the reasonably foreseeable methods of compliance with the Proposed Project can be anticipated. These include 1) the conversion from Cu AFPs to alternative AFPs (non-biocide and lower leach rate Cu AFPs, and non-Cu biocide AFPs); 2) the use of BMPs for hull cleaning; and 3) the monitoring of water and sediment. Potential environmental impacts are discussed below.

I. AESTHETICS – Would the project:

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

Answer: a) No Impact

Discussion: None of the reasonably foreseeable methods of compliance are expected to have an 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 would have an effect on land-based scenic resources.

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

Answer: c) No Impact

Discussion: See responses to I. a & b. None of the reasonably foreseeable methods of compliance would have an effect on the visual quality of the Bay.

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

Answer: d) No Impact

Discussion: All of the reasonably foreseeable methods of compliance are expected to be implemented during daylight hours, and there will be no new sources of substantial light or glare. None of the reasonably foreseeable methods of compliance would have an effect on day or nighttime views of the Bay.

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) No Impact

Discussion: None of the reasonably foreseeable methods of compliance with the proposed TMDLs/Action Plans is expected to conflict with or obstruct implementation of the applicable air quality plan.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas (areas that fail to meet air quality standards) to prepare and submit a state

implementation plan (SIP) that demonstrates the means to attain the federal air quality standards promulgated by the Clean Air Act. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce air pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regards to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

Newport Bay is located within the South Coast Air Basin (SoCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD) in terms of attaining air quality standards. The SCAQMD is required, pursuant to the federal Clean Air Act, to reduce emissions of criteria pollutants for which the SoCAB is in nonattainment. In order to reduce such emissions, the SCAQMD drafted the 2016 Air Quality Management Plan (AQMP). The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state and federal air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, California Air Resources Board (CARB), the Southern California Association of Governments (SCAG), and the USEPA. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.)

According to the SCAQMD, in order for a proposed project to determine consistency with SCAQMD's air quality planning two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include predictions of project emissions in relation to contributing to air quality violations and delay of attainment, which is determined by comparing a project's estimated criteria air pollutant emissions to SCAQMD's significance thresholds. The SCAQMD has established thresholds of significance for air quality for construction and operational activities of proposed projects, as shown in Table III-1.

Table III-1 SCAQMD Significance Thresholds – Pounds per Day

Air Pollutant	Construction Activities	Operations
Reactive Organic Gas / Volatile Organic Compounds	75	55
Carbon Monoxide	550	550
Nitrogen Oxide	100	55
Sulfur Oxide	150	150
Coarse Particulate Matter	150	150

Fine Particulate Matter	55	55

Source: SCAQMD 1993 ($PM_{2.5}$ threshold adopted June 1, 2007)

As shown in Table III-1, SCAQMD significance thresholds are provided in pounds of pollutant per day. Due to the nature of the Proposed Project, only thresholds specific to "Operations" are applicable as no construction is proposed.

1) Would the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new air quality violations?

Air emissions may or are likely to result from the reasonably foreseeable methods of compliance with the proposed TMDLs, including the following:

- emissions during the conversion of some boats to non-biocide paints, since most of the non-biocide paints, which may contain reactive organic gases (ROG) / volatile organic compounds (VOCs), are applied by spraying;

- potential emissions from generators that may be used during hull cleaning with a container/filter system[30]; and

- emissions from vehicular/vessel traffic necessary to conduct monitoring and investigations.

Air emissions resulting from these activities would not result in emissions surpassing the SCAQMD significance thresholds and therefore would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new air quality violations. As previously described, boats may be converted to Cu AFPs with lower leach rates (or to non-biocide AFPs) as part of routine maintenance during the compliance schedule of up to 12 years. This will allow conversions to alternative AFPs as part of the normal repainting schedule of boats, rather than requiring immediate conversions from Cu AFPs. Thus, the generation of ROG/VOC emissions associated with the application of paint products would occur intermittently as a result of the Proposed Project, and would not be generated at levels that would exceed the SCAQMD daily significance threshold of 55 pounds of ROG/VOC. As a point in comparison, the California Emissions Estimator Model (CalEEMod), version 2016.3.2, the preferred statewide land use emissions computer model designed to quantify potential criteria pollutant emissions, has been used to determine the amount of square footage of surface area that would need to be coated daily in order to generate 55 pounds of ROG/VOC in one day. Specifically, 11,100 square feet of surface area would have to be painted in a single day in order to generate 54.75

[30] The container/filter system that was used in the pilot study in Newport Bay employed a gas generator to power the filtration system. This system is currently not in use due to equipment development, and a new system is being developed that will use low horsepower (0.5-1 hp) electric pumps to power the filtration system, rather than the gas generators previously used. These small electric pumps will connect to the electrical grid and will eliminate air emissions. The plan is to run these small electric pumps continuously for 1-2 days during filtration to increase filtration efficiency. (After the boat has been cleaned in the container, the dirty water is run through the filter system. Note that no container/filter systems are presently in operation in Newport Bay.) While electric pumps will be used for the container/filter system similar to the one used in the pilot study in Newport Bay, this SED assumes the use of a gas generator since other container/filter system(s) may be developed and employed in the Bay. Electric pumps would be connected to the electric grid and would have essentially no air emissions. This SED analysis therefore provides a "worst-case" analysis of the potential air quality effects of the use of a container/filter system using a gas generator.

pounds of ROG/VOC. This amount of square footage is equivalent to the hulls of 250 boats, 52 feet in length by 8 feet in transom width. Given existing boatyard capacity in the Bay and considering the compliance schedule of up to 12 years, it is unlikely and thus unexpected that this quantity of boat hulls could or would be painted in a single day as a result of the Proposed Project.

It is noted that the conversion of Cu AFPs to non-biocide AFPs could result in increased biofouling of boat hulls if non-biocide paints are not cleaned at the frequency per the manufacturer's label. This increased fouling growth could result in increased drag and thus a decrease in fuel efficiency and an increase in emissions for power boats. However, the potential impact of this is contingent on several speculative factors, such as whether private boat owners will adhere to paint manufacturer recommendations and the differing intensity of nonadherence, the amount of use individual boats will experience, and the individual operating habits of private boat drivers. Therefore, attempting to quantify the emissions from increased biofouling would be overly speculative.

The emissions generated from a generator(s) necessary for hull cleaning with the container/filter method would not be expected to result in air pollutant emissions exceeding SCAQMD's daily significance thresholds. (Generators are a source of ROG/VOC, carbon monoxide (CO), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$), though the most prevalent emission species generated are oxides of nitrogen (NO_x). At present, one company conducted a pilot study using a container/filter system in Newport Bay. (See footnote 30 above.) (This company has also used this container/filter system in marinas in northern California on a regular basis.) During the pilot study in Newport Bay, this container/filter system used a gas generator on average only 2-3 hours per boat to filter the dirty water after a boat was cleaned in the container. (Note that this company is now replacing the gas generators with small electric pumps to power filtration[31]; these pumps would result in no air emissions.[32] See footnote. Should the use of a container/filter system be selected as a means of compliance with the TMDLs, additional systems may be put into operation (although currently, the container/filter system is only used by one company). According to the CalEEMod, if multiple gas generators associated with these systems operated for a collective 136 hours in a single 8-hour day the result would be the emission of 53.8 pounds of NO_x. (This use intensity equates to the cleaning/filtration of approximately 45 boats in a single day with approximately 17 gas generators, which is an unreasonably high estimation, given that each filtration event employs a gas generator for only a few hours, and approximately 17 container/filter systems would have to be in use concurrently to filter the after-cleaning water from 45 boats.) When this system was in use in Newport Bay, only 5-8 boats could be cleaned/filtered in one 8-hour day. (Again, no air emissions will be generated from the modified system, since gas generators are no longer used with this container/filter system.) The Proposed Project would result in emissions from vehicular/vessel traffic necessary to conduct monitoring and investigations; however, such activities would be integrated with other ongoing monitoring activities that are occurring under existing conditions. Thus, any increase in vehicular/vessel emissions would be insubstantial.

As demonstrated, the Proposed Project would not result in SCAQMD daily significance levels being exceeded. Therefore, the Proposed Project would not result in an increase in the

[31] Personal communication with M. Zlotkin, Innermost Containment Systems, Apr. 2021.

[32] Personal communication with AQMD, Feb. 2021.

frequency or severity of existing air quality violations and would not have the potential to cause or affect a violation of the ambient air quality standards. It is further noted that if the Cu TMDLs are not adopted as proposed by the Proposed Project, then USEPA's TMDLs for Cu must be implemented. These TMDLs include higher reductions for Cu discharges from boats (92% compared to 60% in the proposed Cu TMDLs) and would likely require the same methods of compliance as described for the Proposed Project, but likely a higher amount of emissions since more actions, would be required to achieve the greater reduction.

2) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

As described above, the Proposed Project would not result in SCAQMD daily significance levels being exceeded. Therefore, the Proposed Project would not result in an increase in the frequency or severity of existing air quality violations and would not have the potential to cause or affect a violation of the ambient air quality standards.

Criterion 2:

The second criterion for determining a project's consistency with SCAQMD and SCAG air quality policies focuses on whether the project exceeds the assumptions utilized in preparing the forecasts presented its air quality planning documents. With respect to the second criterion, it is important to recognize that air quality planning within the SoCAB focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Determining whether a project exceeds the assumptions reflected in the 2016 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

1) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the 2016 AQMP?*

A project is consistent with regional air quality planning efforts in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the SCAQMD air quality plans. The Proposed Project recommends amending the Basin Plan to incorporate Cu TMDLs for Newport Bay. It does not involve the development of new housing or employment centers. As such, the Proposed Project would not be contributing to an increase in population, housing or employment growth. Therefore, the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of SCAQMD's air quality plans.

2) *Would the project implement all feasible air quality mitigation measures?*

In order to further reduce emissions, the Proposed Project would be required to comply with emission reduction measures promulgated by the SCAQMD, such as SCAQMD Rule 1113, *Architectural Coatings*. SCAQMD 1113 requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG/VOC emissions from the use of these coatings, primarily by placing limits on the ROG/VOC content of various coating categories. It is noted that both Cu AFPs and non-Cu AFPs (including non-biocide and non-Cu biocide AFPs) sold in the SoCAB are subject to this Rule. As such, the Proposed Project meets this consistency criterion.

3) Would the project be consistent with the land use planning strategies set forth by SCAQMD air quality planning efforts?

The AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The Proposed Project would not affect the land use planning strategies set forth by the SCAQMD.

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of a project on air quality. The Proposed Project would not result in a long-term impact on the region's ability to meet state and federal air quality standards. The Proposed Project's long-term influence would also be consistent with the goals and policies of the SCAQMD's 2016 AQMP.

The Proposed Project would be consistent with the emission-reduction goals of the 2016 AQMP. No impact would occur.

b) **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?**

Answer: b) Less than Significant Impact

Discussion: By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

As demonstrated under Item III a), the Proposed Project would not result in SCAQMD daily significance levels being exceeded. Therefore, the Proposed Project would not result in an increase in the frequency or severity of existing air quality violations and would not have the potential to cause or affect a violation of the ambient air quality standards. It is further noted that if the Cu TMDLs are not adopted as included in the Proposed Project, then USEPA's TMDLs for Cu must be implemented. These TMDLs include higher reductions for Cu discharges from boats (92% compared to 60% in the proposed Cu TMDLs), and thus would likely require the same methods of compliance as described for the Proposed Project, but likely a higher amount of emissions since more actions would be required. This impact is less than significant.

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

Answer: c) Less than Significant Impact

Discussion: Sensitive receptors generally include children, the elderly, and those with pre-existing conditions that may be worsened by exposure to air contaminants emitted from vehicles/vessels/generators. Emissions from gasoline, diesel, or propane generators as well as

those from the application of paint can potentially expose sensitive receptors to substantial amounts of pollutant concentrations. The portion of the SoCAB which encompasses the Proposed Project area is designated as a nonattainment area for federal ozone (O_3), $PM_{2.5}$, and PM_{10} standards and is also a nonattainment area for the state standards for O_3 and $PM_{2.5}$. Thus, existing O_3 and PM_{10} levels in the SoCAB are at unhealthy levels during certain periods.

The health effects associated with O_3 are generally associated with reduced lung function and the Proposed Project could involve increased painting that would result in the O_3 precursor emission, ROG/VOC. However, as previously described, the generation of ROG/VOC emissions associated with the application of paint products would occur intermittently as a result of the Project, and would not be generated at levels that would exceed the SCAQMD daily significance threshold of 55 pounds of ROG/VOC. 11,100 square feet of surface area would have to be painted in a single day in order to generate 54.75 pounds of ROG/VOC. This amount of square footage is equivalent to the hulls of 250 boats, 52 feet in length by 8 feet in transom width. Since boatyard capacity in the Bay is insufficient to allow painting this number of boats in a single day and considering the recommended compliance schedule of up to 12 years, it is unlikely, and thus unexpected, that this quantity of boat hulls would be painted in a single day as a result of the Proposed Project. Similarly, the O_3 precursor emission, NO_x, generated by the potential use of gas generators used for container/filter hull cleaning activity would also not be expected to result in air pollutant emissions exceeding SCAQMD's daily significance thresholds. See answer III (a) above, and footnote 30. Since the Proposed Project would not result in the O_3 precursors, ROG/VOC, or NO_x in excess of the SCAQMD thresholds, the Proposed Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. According to CalEEMod, multiple generators operating for a collective 136 hours in a single day would result in the emission of 2.85 pounds of PM_{10} and 2.85 pounds of $PM_{2.5}$, which are well below the SCAQMD daily significance thresholds of 150 pounds of PM_{10} and 55 pounds of $PM_{2.5}$. Accordingly, the resultant PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

The overall strategy for reducing air pollution and related health effects in the SoCAB is contained in the SCAQMD 2016 AQMP. The AQMP provides control measures that reduce emissions to attain federal ambient air quality standards by their applicable deadlines such as the application of available cleaner technologies, best management practices, incentive programs, as well as development and implementation of zero and near-zero technologies and control methods. The CEQA thresholds of significance established by the SCAQMD are designed to meet the objectives of the AQMP and in doing so achieve attainment status with state and federal standards. As noted above, the Proposed Project would potentially increase the emission of these pollutants but would not exceed the thresholds of significance established by the SCAQMD for purposes of reducing air pollution and its deleterious health effects.

It is further noted that if the Cu TMDLs are not adopted as proposed by the Project, then USEPA's TMDLs for Cu must be implemented. These TMDLs include higher reductions for Cu discharges from boats (92% compared to 60% in the proposed Cu TMDLs), and thus would

likely require the same *methods* of compliance as described for the Proposed Project, but a higher amount of emissions since more actions would be required.

d) **Result in other emissions, such as those leading to odors affecting a substantial number of people?**

Answer: d) No Impact

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 and thereby would not affect a substantial number of people. The emission of air contaminants that create a condition of public nuisance is prohibited by SCAQMD Rule 402. Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Conformance with existing regulations, including the use of vehicles meeting applicable operating and emissions standards, would reduce noxious emissions. Objectionable odors from vehicles/vessels/generators would be temporary and would dissipate once the vehicle has passed through the area or when generator operations are completed. There is no impact.

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) Potentially Significant Impact

Discussion: State and/or federal listed threatened and endangered species that are known to or may occur in fresh- or saltwater 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. Willow riparian woodland habitat; nesting documented at the Newport Aquatic Center in Upper Newport Bay.)

- Southwestern Willow Flycatcher – *Empidonax traillii extimas* (endangered terrestrial bird that eats insects, some of which have a freshwater aquatic larval stage. Nesting restricted to willow thickets.)

- Belding's savannah sparrow – *Passerculus sandwichensis beldingi* (State endangered species; prefers salt marshes and lagoons dominated by *Salicornia*. Known to occur in Upper Newport Bay.)

- California brown pelican – *Pelecanus occidentalis californicus* (endangered; potential foraging habitat in Upper Newport Bay.)

- California black rail – *Laterallis jamaicensis coturniculus* (federal species of concern, state threatened species. Potential freshwater marsh habitat in San Joaquin Marsh and known to occur in Upper Newport Bay.)

- White-tailed kite – *Elanus leucurus* (California fully protected species; potential foraging habitat in Upper Newport Bay. Known to roost at the San Joaquin Marsh.)

- American white pelican – *Pelecanus erythrorhynchos* (California species of special concern; foraging habitat in Upper Newport Bay and the Santa Ana-Delhi Channel.)

- White-faced ibis – *Plegadis rhihi* (California species of special concern; potential foraging habitat in Upper Newport Bay and freshwater tributaries.)

- Osprey – *Pandion haliaetus* (California species of special concern; potential foraging and nesting habitat in Upper Newport Bay. Known to occur in San Diego Creek.)

- Northern harrier – *Circus cyaneus* (California species of special concern; potential foraging habitat in Upper Newport Bay, San Diego Creek, and the Santa Ana-Delhi Channel. Observed in the Santa Ana-Delhi Channel.)

- Sharp-shinned hawk – *Accipiter striatus* (California species of special concern; potential foraging habitat in Upper Newport Bay.)

- Peregrine falcon – *Falco peregrinus anatum* (California species of special concern; potential foraging habitat in Upper Newport Bay.)

- Prairie falcon - *Falco mexicanus* (California species of special concern; potential foraging habitat within Upper Newport Bay and San Joaquin Marsh.)

- Long-billed curlew – *Numenius americanus* (California species of special concern; potential wintering habitat in Upper Newport Bay. Known to winter in the San Joaquin Marsh.)

- California gull – *Larus californicus* (California species of special concern; suitable foraging habitat in Upper Newport Bay and San Joaquin Marsh.)

- Elegant tern – *Sterna elegans* (California species of special concern; potential foraging habitat in Upper Newport Bay. Known to occur in the San Joaquin Marsh.)

- Black Skimmer – *Rynchops niger* (California species of special concern; known to nest in Upper Newport Bay. Potential habitat in the San Joaquin Marsh.)

- Short-eared owl – *Asio flammeus* (California species of special concern; saltmarshes, open grassland and agricultural areas. Regular fall migrant to San Joaquin Marsh and Upper Newport Bay.)

- Loggerhead shrike – *Lanius ludovicianus* (California species of special concern; potential habitat in Upper Newport Bay. Known to occur in the Santa Ana-Delhi Channel and San Joaquin Marsh.)

- Yellow-breasted chat – *Icteria virens* (California species of special concern; dense riparian woodland habitat. Known to occur in Upper Newport Bay.)

Amphibians

- Western Pond turtle - *Clemmys marmorata pallida* (California species of special concern; potential habitat in Big Canyon Wash and limited sections of the lower Santa Ana-Delhi Channel; 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)

Fish

- Tidewater goby – *Eucyclogobius newberryi* (Federally listed as endangered; potential to occur in Upper Newport Bay.)

Plants

- Salt marsh bird's beak – *Cordylanthus maritimus* **subsp**, *maritimus* (Federally and State listed as endangered. Known populations in salt marshes in Upper Newport Bay near Big Canyon Wash.)

It is possible that some of the reasonably foreseeable methods of compliance with the proposed TMDLs could have a direct or indirect adverse impact on biological resources, including some of the listed or candidate species of concern. This potential impact may result from the use of non-biocide AFPs, which may allow the introduction of invasive species and may contain ingredients (such as fluoropolymers) that could adversely affect the biota directly. There is limited information available concerning the potential environmental effects of non-biocide AFPs (see 4.1.1.(3)). Complicating factors are that many of the paints do not have full disclosure of ingredients because of the manufacturers' proprietary rights and many of the compounds being used have not been tested for use in marine systems, and new non-biocide paints continue to be developed. As stated previously (4.1.1.(3)), the State of Washington Department of Ecology found that while certain non-biocide AFPs show potential as an effective alternative to Cu AFPs, long-term monitoring and evaluation are needed to assess environmental impacts. This finding was reaffirmed in the Department of Ecology's 2019 follow-up report to the Washington

Legislature[33]. Again, as noted above (4.1.1.(3)), the Department also concluded that safer (less potential environmental harm) alternatives to biocidal AFPs include "painting boats with non-biocidal paints and using brushes or other washing systems to remove fouling organisms." This option would avoid the direct chemical effect on water quality and wildlife produced by toxic AFP options. The Department's 2019 Report also identified some emerging technologies that focus on fouling avoidance (e.g., dry docking of boats), which would reduce or eliminate the use of AFPs altogether.

As reflected in the Washington Department of Ecology's findings, it is more likely that the use of non-Cu biocide AFPs, which contain potential contaminants, such as zinc or organics, could result in adverse effects on aquatic organisms since these contaminants are known biocides that are regulated by DPR. Dischargers should consult with the CDFW and the USFWS prior to implementing compliance strategies that pose a potentially significant impact to both protected and non-protected species. (Santa Ana Water Board staff have consulted with CDFW regarding the potential impacts of the proposed TMDLs on biological resources. CDFW has determined that for the purposes of the assessment of CEQA filing fees, the proposed TMDLs have the potential to adversely affect fish and wildlife or their habitat.[34] However, CDFW has not provided comments that detail specific concerns regarding the potential effects of the proposed TMDLs.) Dischargers should identify and implement compliance strategies that will eliminate or otherwise minimize adverse impacts to biological resources.

The use of lower leach rate Cu AFPs or the conversion to non-biocide AFPs will reduce Cu discharges to the Bay from boats. The conversion to non-Cu biocide AFPs is not recommended and a discharger's proposed implementation plan that entails the use will likely not be approved by the Santa Ana Water Board, unless it can be demonstrated that water quality standards will not be violated. If these non-Cu biocide paints are employed, mitigation measures should be implemented to reduce the discharge of biocides and, in turn, reduce potential adverse impacts These measures include the use of hull cleaning BMPs (e.g., soft cloths, container/filter system).

Increased fouling growth on non-biocide paints
The use of non-biocide AFPs will likely result in increased growth of fouling organisms since they are less effective than Cu AFPs at controlling fouling. Therefore, if boats have travelled to ports outside the Bay the use of non-biocide AFPs could potentially result in the introduction and increased growth and species diversity of non-native organisms (invasive species). Some invasive species have the potential to cause disruptions in ecosystems by a variety of mechanisms, such as through competition with native biota for food and resources. If invasive species are inadvertently introduced into Newport Bay, there could be potential impacts to native communities in the Bay. This potentially significant impact could be mitigated by choosing an alternative paint that is effective at reducing fouling because of physical characteristics (such as silicone or hard epoxy coatings). (*Note that invasive species may also be introduced in the bilge water, which is unrelated to the use of non-biocide AFPs, and not regulated under these TMDLs.)*

[33] Antifouling Paints in Washington State – Report and Recommendations. *Report to the Legislature Pursuant to SHB 2634 (2018)*. September 2019.

[34] California Department of Fish and Wildlife letter re CEQA Filing Fee Exemption Request – Copper TMDLs and Other Metals Action Plans. October 13, 2016.

Another potential mitigation strategy would be to adopt an inspection/cleaning protocol that requires that boats that have travelled to ports outside Newport Bay have their hulls cleaned before they leave their last port prior to mooring, docking, or berthing in Newport Bay. Using this strategy, the hulls should be clean when the boats return to Newport Bay, which would reduce the chance of introducing an invasive species.

It should also be noted that if approved, the proposed Cu TMDLs should help to encourage paint manufacturers to develop non-biocide paints that are also effective AFPs. The dischargers can encourage and perhaps participate in the development of such alternative AFPs.

Increased use of non-Cu biocide paints

The conversion of boats from Cu AFPs to non-Cu biocides, rather than non-biocide or lower leach rate Cu AFPs, is not recommended. Like Cu AFPs, non-Cu biocides, including Zn and organic paints, leach a biocide into the water to prevent fouling. These other biocides may have adverse biological effects, including adverse effects on reproductive success, comparable to those associated with Cu AFPs. (As noted above, non-biocide AFPs may also contain ingredients that could cause adverse effects on the biota; however, limited data are currently available concerning such potential effects of non-biocide ingredients on aquatic organisms. Note that the potential for adverse effects on the biota is expected to be greater with the use of non-Cu biocide AFPs, since these AFPs contain known toxins.) Incentives should be provided to encourage the use of non-biocide AFPs (and lower leach rate Cu AFPs). Again, with the use of all AFPs, mitigation measures should be implemented, including hull cleaning BMPs (e.g., the use of soft cloths or a container/filter system, and application and cleaning of AFPs in accordance with labeling instructions) to minimize adverse effects.

Implementation plans proposed by the dischargers that include conversions to non-Cu biocide AFPs are not likely to be approved by the Santa Ana Water Board, unless the discharger demonstrates that no violations of water quality standards will occur as the result of implementation of such plans.

Container/filter method for hull cleaning

The use of the container/filter BMP method for hull cleaning entails cleaning the boat in a container (bag), then filtering the water from the container before discharging it back into the Bay; the solids at the bottom of the bag are then collected, dried and disposed of in an appropriate landfill. By this method *no particulate Cu (or other metal) discharges from hull cleaning are released to the Bay.* In contrast, normal hull cleaning, as now practiced by divers, allows all discharges from hull cleaning to remain in Bay waters –and at least some of the solids settle to the bottom sediments. The container/filter method, therefore, improves water and sediment quality for the biota and should cause no significant adverse impacts to biological resources and the environment.

Monitoring and evaluation studies

Monitoring and evaluation studies are a requisite part of any implementation strategy to achieve the proposed TMDLs (or USEPA's TMDLs). The monitoring and evaluation of water and sediments for metals are expected to have no significant adverse impacts on the biota as a whole; however, limited numbers of organisms will be lost to sample collection and analysis.

The purpose of the TMDLs is to achieve and monitor compliance with water quality standards, including the protection of beneficial uses. The beneficial uses of Upper Newport Bay include Preservation of Biological Habitats of Special Significance (BIOL); Wildlife Habitat (WILD); Rare, Threatened or Endangered Species (RARE); Spawning, Reproduction, and Development (SPWN), Shellfish Harvesting (SHEL), and Estuarine Habitat (EST). With the exception of BIOL and EST, these same beneficial uses apply to Lower Newport Bay in addition to navigation (NAV). Improving water quality that is impaired due to Cu in water will be beneficial to biological resources that are protected by these beneficial uses. While the implementation of the reasonably foreseeable methods of compliance could potentially impact biological resources, the overall effect of the implementation of the TMDLs is expected to be beneficial to biological resources by reducing Cu concentrations to achieve the CTR chronic criterion.

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) Potentially Significant Impact

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 are 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) No Impact

Discussion: None of the reasonably foreseeable methods of compliance entails physical modifications that would affect wildlife corridors, impede the movement of aquatic organisms or affect nursery sites.

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

Answer: e) No Impact

Discussion: None of the reasonably foreseeable methods of compliance with the proposed TMDLs are expected to 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:
None of the reasonably foreseeable methods of compliance with the proposed TMDLs 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 pursuant to § 15064.5?

Answer: a) No Impact

Discussion: A 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."[35]
None of the reasonably foreseeable methods of compliance with the proposed TMDLs would have an impact on a historical resource.

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 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 would have an impact on archaeological resources. Archaeological resources may be present in the

[35] California Public Resource Code Section 5024.1, Title 14 California Code of Regulation Section 4850 et seq.

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

Answer: c) No Impact

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

VI. ENERGY – Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Answer: a) No Impact

Discussion: Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. For the purposes of this analysis, it is noted that if the Cu TMDLs are not adopted as proposed by the Project, then USEPA's TMDLs for Cu must be implemented. These TMDLs include higher reductions for Cu discharges from boats (92% compared to 60% in the proposed Cu TMDLs), and thus would likely require the same methods of compliance as described for the Proposed Project, but possibly a higher amount of energy consumption. As previously described, Santa Ana Water Board staff's Impairment Assessment found water column impairment for Cu in both the Upper and Lower Bay, confirming that Cu TMDLs are necessary. Thus, the energy consumption resulting from the Proposed Project, which seeks to limit Cu discharge, would not be an inefficient, wasteful, or unnecessary use of energy. There is no impact.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Answer: b) No Impact

Discussion: See response to VI. a) above. The Project would not conflict with or obstruct any state or local plan for renewable energy or energy efficiency. There is no impact.

VII. GEOLOGY AND SOILS - Would the project:

a) Directly or indirectly cause 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 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 is expected to have any impacts on soil erosion or the loss of topsoil. The reasonably foreseeable methods of compliance are focused in and adjacent to Newport Bay itself and include the use of vehicles/vessels/generators for monitoring and hull cleaning.

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 direct or indirect 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 is expected to involve the use of septic tanks or alternative wastewater disposal systems.

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

Answer: f) No Impact

Discussion: See responses to V. a & 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. None of the reasonably foreseeable methods of compliance with the proposed TMDLs would have an impact on a paleontological resource or site or unique geologic feature.

VIII. 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 Impact

Discussion: The local air quality agency regulating the SoCAB is the SCAQMD, the regional air pollution control officer for the basin. To provide guidance to local lead agencies on determining significance for greenhouse gas (GHG) emissions in CEQA documents, SCAQMD staff convened a GHG CEQA Significance Threshold Working Group. The Working Group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research (OPR), CARB, the Attorney General's Office, a variety of city and county planning departments in the SoCAB, various utilities such as sanitation and power companies throughout the SoCAB, industry groups, and environmental and professional organizations. On October 8, 2008, the SCAQMD released the Draft AQMD Staff CEQA GHG Significance Thresholds. On September 28, 2010, SCAQMD Working Group Meeting #15 provided further guidance, including a numeric "bright-line" threshold of 3,000 metric tons of carbon dioxide equivalent (CO_2e) annually and an efficiency-based threshold of 4.8 metric tons of CO_2e per service population (defined as the people that work, study, live, patronize and/or congregate on the Project site) per year in 2020

and 3.0 metric tons of CO_2e per service population per year in 2035. The numeric bright line and efficiency-based thresholds were developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provide guidance to CEQA practitioners and lead agencies with regard to determining whether GHG emissions from a proposed project are significant.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 204, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World* (July 2011) 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

There are no adopted GHG significance thresholds in the region, yet this SED may set a project-specific threshold based on the context of the Project, including using the SCAQMD Working Group expert recommendation, as the Project is in the same air quality basin that the experts analyzed. For the Proposed Project, the SCAQMD's 3,000 metric tons of CO_2e per year screening threshold is used as the significance threshold. The 3,000 metric tons of CO_2e per year screening threshold represents a 90 percent capture rate (i.e., this threshold captures projects that represent approximately 90 percent of GHG emissions from new sources). The 3,000 metric tons of CO_2e per year value is typically used in defining small projects within this air basin that are considered less than significant because it represents less than one percent of future 2050 statewide GHG emissions target and the lead agency can provide more efficient implementation of CEQA by focusing its scarce resources on the top 90 percent. This screening threshold is correlated to the 90 percent capture rate for industrial projects within the air basin. Land use projects above the 3,000 metric tons of CO_2e per year level would fall within the 90 percent of largest projects that are worth mitigating without wasting scarce financial, governmental, physical and social resources. (SCAQMD, Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold, at pp. 3-2 and 3-3; Crockett 2011).

Similar to criteria air pollutant emissions discussed in Section III, GHG emissions may or are likely to result from the reasonably foreseeable methods of compliance with the proposed TMDLs, including emissions if generators that may be used during hull cleaning with a filter method and emissions from vehicular/vessel traffic necessary to conduct monitoring and investigations. However, these Project emission sources would not generate new GHG emissions at rates that would exceed the SCAQMD annual significance threshold of 3,000

metric tons considering the compliance schedule of up to 12 years. As a point in comparison, GHG emissions from the Proposed Project would need to equate to more than 36,400,000 miles traveled by a passenger car annually (99,726 miles daily) AND 216 hours of diesel generator use every day of the year to produce 3,000 metric tons of CO_2e, per CalEEMod. The Project activities would not result in this level of emissions.

The conversion of Cu AFPs to non-biocide AFPs could result in increased biofouling of boat hulls if non-biocide paints are not cleaned at the frequency per the manufacturer's label. This increased fouling growth could result in increased drag and thus a decrease in fuel efficiency and an increase in GHG emissions for power boats. However, the impact of this potential impact is contingent on several speculative factors, such as the type of non-biocide paint, and whether private boat owners will adhere to paint manufacturer recommendations and the differing intensity of nonadherence, the amount of use individual boats receive, and the individual operating/driving habits of private boat owners. Therefore, attempting to quantify the emissions from increased biofouling would be overly speculative, and again is highly dependent on the non-biocide paint that is used.

Note also that if the Cu TMDLs are not adopted as proposed by the Project, then USEPA's TMDLs for Cu must be implemented. These TMDLs include higher reductions for Cu discharges from boats (92% compared to 60% in the proposed Cu TMDLs), and thus would likely require a higher use of the same methods of compliance as described for the Proposed Project, with also a higher amount of GHG emissions.

The Project would not result in the increase of GHG emissions in excess of the SCAQMD annual significance thresholds and this impact is less than significant.

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 Impact

Discussion: See response to VIII. a) above. The Project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The Proposed Project is subject to compliance with statewide GHG-reducing goals promulgated by the California 2008 Climate Change Scoping Plan and subsequent updates. As discussed previously, the GHG emissions generated by the Proposed Project would not surpass the SCAQMD annual significance threshold. The Proposed Project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs. This impact is less than significant.

IX. 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

Discussion:

-

A body of federal, state and local statutes and regulations govern the handling, storage, transport and disposal of hazardous materials. Compliance with these requirements would ensure that impacts associated with operation of reasonably foreseeable methods of compliance with the proposed TMDLs are reduced to less than significant levels.

The conversion of boats from Cu to non-biocide (or other alternative) AFPs will or may entail the use or generation of hazardous materials, including 1) the AFPs themselves and 2) wastes due to the stripping or sanding of Cu AFPs (prior to the application of the non-biocide AFPs) and the application of non-biocide AFPs (which are generally sprayed on rather than rolled on and may result in in airborne particulates if containment equipment is not in place). *Note that boats that are repainted with Cu AFPs may also require stripping or sanding of the old paints prior to the reapplication of a Cu AFP.* This practice is already an established, routine part of vessel maintenance, and stripping wastes are required to be contained. The recommended interim and final compliance schedules for the proposed Cu TMDLs (up to 12 years) allows for conversions from Cu AFPs to lower leach rate and non-biocide AFPs during routine repainting schedules. The proposed TMDLs would therefore not be expected to have a significant incremental effect.

Human exposure concerns resulting from AFPs (biocide and non-biocides) are primarily related to those individuals (professionals or private boat owners) who apply AFPs and who strip or sand boat hulls to remove coatings prior to repainting. The likely route of exposure for these individuals is via inhalation and contact with the skin. It is less likely that oral exposure will occur. Newport Bay is a marine water body not used for drinking water supply. There may be incidental and insignificant swallowing of limited amounts of Bay waters by in-water hull cleaners. Once the AFP coating is applied and the boat is launched, it is unlikely that boaters will have significant exposure to the coating, and volatile chemicals will have volatized by that time. Inhalation and dermal exposure can be prevented by the use of standard practices, including the use personal protective equipment.

Hull cleaning with the container/filter method results in the discharge of filtered hull cleaning water, and residual solids are left in the bag after filtering. These are not considered to be hazardous wastes since the metal concentrations do not exceed the hazardous waste threshold (2500 mg/kg for Cu, 5000 mg/kg for Zn)[36]; therefore, they are not considered to be a hazardous waste, as determined by the California Department of Toxics Substances Control. The residual solids are collected, dried and disposed of in appropriate landfills in accordance with applicable regulations. The container/filter method is better for Bay water quality than current underwater hull cleaning by divers since current hull cleaning practices release dissolved Cu (and other metals) and particulate Cu, including paint particles and fouling, into Bay waters. After hull cleaning by divers, the Cu plume eventually disperses, but the solids released are not collected and typically settle to the bottom sediments in the Bay (mostly in marina areas). These toxic solids may then adversely affect aquatic biota, including benthic invertebrates and/or fish that prey on those invertebrates.

The use of vehicles and vessels for monitoring entails fueling and maintenance (use of oil and, potentially, solvents and degreasers). Vehicle and vessels are already used in the Bay to collect and transport samples as part of established monitoring programs. Monitoring and evaluation

[36] Soluble threshold limit concentration from DTSC.

required by the proposed Cu TMDLs would be integrated with existing monitoring but may result in an approximate 10-20% increase in vehicle/vessel use.[37]

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

Discussion: See responses to IX. a. above.

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 non-biocide AFPs (or lower leach rate Cu AFPs) on boat hulls nor hull cleaning projects are expected to take place within one-quarter mile of an existing or proposed school. For this reason, no impacts would occur.

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: None of the reasonably foreseeable methods of compliance with the proposed TMDLs 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. 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 or excessive noise for people residing or working in the project area?

Answer: e) No Impact

Discussion: Portions of Upper Newport Bay are included in mapping prepared for the Airport Environs Land Use Plan (AELUP) (Orange County Airport Land Use Commission, April 17, 2008) to delineate runway safety zones, airport impact zones (areas subject to air navigation hazards for those living, working or recreating in the areas), notification areas, and airport obstruction imaginary surfaces. Land use planning within the AELUP must conform to specific noise, safety and building height restrictions. (Lower Newport Bay and areas of the Pacific Ocean are also included in mapping of airport obstruction imaginary surfaces.) None of the

[37] Personal communication with County of Orange staff.

reasonably foreseeable methods of compliance with the proposed TMDLs are expected to affect air navigation safety hazards.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Answer: f) No Impact

Discussion: None of the reasonably foreseeable methods of compliance with the proposed TMDLs are expected to interfere with any emergency response/evacuation plan. For this reason, no impacts would occur.

g) **Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

Answer: g) No Impact

Discussion: The reasonably foreseeable methods of compliance with the proposed TMDLs are expected to take place in or adjacent to Newport Bay and will not expose people or structures to wildland fires. For this reason, no impacts related to wildland fires are reasonably foreseeable.

X. HYDROLOGY AND WATER QUALITY – Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Answer: a) Potentially Significant

Discussion: The Cu TMDLs have been proposed because water within Newport Bay does not currently meet Cu water quality standards. The Proposed Project establishes the amount of Cu that may be discharged such that the Cu water quality in Newport Bay will meet water quality standards in accordance with a prescribed schedule. The goal of the Proposed Project is to improve water quality compared to existing conditions. The Cu TMDLs require a reduction in Cu discharges from Cu AFPs on boats. These reductions would occur through the development and application of the implementation plans that the dischargers must develop pursuant to orders issued to implement the TMDLs.

This document considers the potential environmental effects of the project at a programmatic level. Reasonably foreseeable strategies to achieve the necessary reduction in Cu to achieve water quality standards include:

- the use of BMPs during hull cleaning;
- the development and use of a diver certification/education program;
- the implementation of an education program for boaters and marina owner/operators; and
- the conversion from Cu AFPs to alternative paints (lower leach rate Cu AFPs**,** non-biocide AFPs, non-Cu biocide paints**)**.

Alternative Paints

DPR established a regulation for a maximum allowable leach rate (9.5 µg/cm^2/d) for Cu antifouling paints (AFPs) on recreational boats to be effective July 1, 2018 (compliance for most boats by June 30, 2020)[38]. Conversion to lower leach rate Cu AFPs alone is not expected to meet the CTR or achieve compliance with the TMDLs: the use of BMPs is inherently built into the determination of the leach rate. Due to the existing DPR requirements, lower leach rate Cu AFPs would already be required at the time individual implementation plans were developed and would accordingly be part of the existing environmental setting for the implementation plans. If Cu AFPs are replaced with non-biocide paints, most non-biocide paints require that the Cu AFPs be stripped prior to application of the non-biocide paints. These stripping wastes may contain metals and other contaminants that can potentially have impacts on the environment if the wastes are not properly controlled or disposed. However, hard (epoxy) Cu AFPs also require that the paint be stripped after several years to remove the buildup of paint residue that has formed. To avoid these impacts, waste generated by the stripping of paints should be properly contained and disposed using standard BMPs and practices based on hazardous waste management and AQMD requirements.

Non-Cu AFPs include both non-biocide AFPs and non-Cu biocide AFPs.

Non-biocide AFPs - Currently, there are a few non-biocide alternatives that may be used to replace Cu AFPs.[39] Non-biocide AFPs will reduce the amount of Cu leaching into the waters of Newport Bay and will thus help improve Cu water quality relative to current conditions. However, monitoring and evaluation are needed to assess potential environmental impacts that may be associated with the use of these non-biocide AFPs. While no biocidal claim is associated with these paints (and they are thus not under the purview of DPR), these paints may contain ingredients that could potentially result in toxic effects to the biota if released into the water in sufficient quantities. (See discussion in IV. Biological Resources a), above.) If such non-biocide AFPs are included in individual discharger implementation plans, the potential effects on water quality and biota would need to be considered in any environmental review required as part of the review and approval of specific projects. Consistent with Water Code requirements, which preclude Water Boards from dictating the method or manner of compliance when implementing the TMDLs through appropriate orders, the Cu TMDLs identify non-biocide AFPs for consideration by the dischargers in developing their Cu reduction strategies, but the TMDLs do not establish a requirement for their use.

Non-Cu biocide AFPs - Some non-Cu biocide paints may be as toxic or more toxic to the biota than Cu AFPs (e.g., Zn or organic biocide paints). Inclusion of such paints in individual implementation plans could potentially lead to violations of water quality standards, including the narrative objective that requires that toxic substances not be discharged in amounts that would adversely affect beneficial uses or be harmful to human health. (See also discussion in IX, Hazards and Hazardous Materials, a), above.) However, the use of non-Cu biocide AFPs on a

[38] Department of Pesticide Regulation. 2018. Final Decision Concerning Reevaluation of Copper Based Antifouling Paint Pesticides. CA Notice 2018-03.

[39] Marina del Rey Pilot Hull Paint Study Final Report, May 2, 2019, Los Angeles County Department of Beaches and Harbors [note: this report summarizes the results of the first phase of the Pilot Study]

limited number of boats may not cause a violation of water quality standards. If such non-Cu biocide AFPs are included in individual discharger implementation plans, the potential effects on water quality and biota would need to be considered in any environmental review required as part of the review and approval of specific projects.

The Santa Ana Water Board does not recommend the use of non-Cu biocide AFPs as a substitute for Cu AFPs. To comply with water quality standards, applicable waste discharge requirements, and the Basin Plan, individual dischargers would need to demonstrate that their implementation plans will not unreasonably affect beneficial uses and will not be harmful to human health, including any such plans that propose the use of non-Cu biocide AFPs. The Santa Ana Water Board cannot approve implementation plans that would violate water quality standards or would otherwise be inconsistent with the Basin Plan.

The specific impacts of alternative (non-biocide and non-Cu biocide) AFPs cannot be determined at this time, since those impacts would depend on such factors as the number and sizes of boats converted, the leach rates of the biocides in non-Cu biocide AFPs, and the potential effects of the ingredients, which are often proprietary, in non-biocide AFPs. However, the impacts of the use of alternative AFPs to achieve requisite Cu reductions could be potentially significant. Dischargers proposing to achieve Cu discharge reductions by conversions from Cu to non-biocide or non-Cu biocide AFPs should seek AFP alternatives or implementation strategies (e.g., limiting the number of boats and/or spatially dispersing them) such that these potential impacts would be mitigated to insignificant levels.

Implementation of the other reasonably foreseeable methods of compliance, such as the use of BMPs during hull cleaning, the development and use of a diver education and certification program, and the implementation of education program for boaters and marina owner/operators, is expected to improve water quality conditions and not cause or contribute to a violation of water quality standards or waste discharge requirements. Implementation of BMPs, a diver education/certification program, and an education program for boaters and marina owner/operators could reduce the need to consider conversions from Cu to alternative AFPs to achieve the requisite Cu reductions.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Answer: b) No Impact

Discussion: None of the reasonably foreseeable methods of compliance are 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, or through the addition of impervious surfaces, in a manner that would:

i) Result in substantial erosion or siltation on- or off-site?

Answer: c.i) No Impact

Discussion: None of the reasonably foreseeable methods of compliance are expected to substantially alter the existing drainage patterns in a manner that would result in substantial erosion or siltation on- or off-site.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Answer: c.ii) No Impact

Discussion: None of the reasonably foreseeable methods of compliance are expected to substantially alter the existing drainage patterns in a manner that would substantially alter the rate or amount of surface runoff.

iii) 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: c.iii) No Impact

Discussion: None of the reasonably foreseeable methods of compliance are expected to create or contribute runoff water. Stripping of old Cu AFPs from boat hulls that may be converted to alternative AFPs could generate materials that could pollute runoff if not managed in accordance with applicable regulations. As stated above, it is assumed in this SED that boatyards and similar facilities would operate consistent with existing environmental regulations. In addition, boats that currently use Cu AFPs require occasional stripping of old paint so any conversions to alternative AFPs would not generate substantial additional sources of such material, beyond that which already exists. Therefore, there would be no impact on the capacity of existing or planned stormwater drainage systems and no contribution of substantial additional sources of polluted runoff.

iv) Impede or redirect flood flows?

Answer: c.iv.) No Impact

Discussion: None of the reasonably foreseeable methods of compliance are expected to affect surface water flows, let alone impede or redirect flood flows.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Answer: d) Less Than Significant

Discussion: Stripping of old Cu AFPs from boat hulls that may be converted to alternative AFPs could generate pollutants that could be released during a tsunami. However, these pollutants are currently generated and temporarily stored at boatyards and similar facilities as part of their current operations. Potential conversions to alternative AFPs that included the stripping of old Cu AFPs would not generate substantial additional sources of such material,

beyond that which already exists. In addition, as stated above, it is assumed in this SED that boatyards and similar facilities would operate consistent with existing environmental regulations. Thus, any potential for release of pollutants generated due to the stripping of Cu AFPs from boats is consistent with existing conditions and does not represent a significant increase in risk or magnitude of release beyond that which already exists.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Answer: e) Less Than Significant

Discussion: To comply with the Basin Plan, individual dischargers would need to demonstrate that their implementation plans meet water quality standards, including the demonstration that there would not be unreasonable adverse effects on beneficial uses and that their plan would not be harmful to human health. The Santa Ana Water Board cannot approve implementation plans that would violate water quality standards or that would otherwise conflict with or obstruct implementation of the Basin Plan.

The Proposed Project will not have any effect on groundwater management.

XI. LAND USE AND PLANNING - Would the project:

a) Physically divide an established community?

Answer: a) No Impact

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

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Answer: b) No Impact

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

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

XIII. NOISE -- Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Answer: a) Less than significant

Discussion: The reasonably foreseeable methods of compliance, including 1) the use of BMPs for hull cleaning; 2) the conversion from Cu AFPs to lower leach rate Cu AFPs and alternative AFPs (non-biocide AFPs) (the use of non-Cu biocide AFPs are not recommended); and 3) the monitoring and evaluation of water and sediments are activities already being conducted in Newport Bay. While monitoring activities are likely to increase if the proposed TMDLs are approved and implemented, significant increases in noise that result in noise levels in excess of applicable standards are not expected. The use of BMPs such as soft cloths would not result in noise generation. The use of gas generators associated with the container/filter method to clean hulls would result in some increases in noise levels when the generators are in use. If electric pumps are used rather than gas generators, the increase in noise should be minimal. These operations may result in temporary increases in noise levels during daylight hours as these activities are conducted; however, such effects would be limited in scope and duration.

b) Generation of excessive ground borne vibration or ground borne noise levels?

Answer: b) No Impact

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

c) For a project located within the vicinity of a private airstrip or 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: c) No Impact

Discussion:
Portions of Upper Newport Bay are included in mapping prepared for the Airport Environs Land Use Plan (AELUP) (Orange County Airport Land Use Commission, April 17, 2008) to delineate runway safety zones, airport impact zones (areas subject to air navigation hazards for those living, working or recreating in the areas), notification areas, and airport obstruction imaginary surfaces. Land use planning within the AELUP must conform to specific noise, safety and building height restrictions. (Lower Newport Bay and areas of the Pacific Ocean are also included in mapping of airport obstruction imaginary surfaces.) None of the reasonably foreseeable methods of compliance with the proposed TMDLs is expected to result in excessive noise levels.

XIV. POPULATION AND HOUSING - Would the project:

a) Induce substantial unplanned 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 reasonably foreseeable methods of compliance will have no direct or indirect effect on population growth.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Answer: b) No Impact

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

XV. 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 reasonably foreseeable methods of compliance will require no construction for new or altered governmental facilities.

XVI. RECREATION - Would the project:

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

Answer: a) No Impact

Discussion: The reasonably foreseeable methods of compliance are expected to take place in and or adjacent to Newport Bay and 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 reasonably foreseeable methods of compliance are expected to take place in and or adjacent to Newport Bay and 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.

XVII. TRANSPORTATION/TRAFFIC -- Would the project:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?

Answer: a) No Impact

Discussion: The reasonably foreseeable methods of compliance would have no significant impact on circulation systems.

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Answer: b) Less than Significant

Discussion:
The monitoring activities associated with the Proposed Project would be integrated with other ongoing monitoring activities that are occurring under existing conditions, but increased monitoring may result in up to a 20% increase in vehicle trips. The Proposed Project would not negatively impact the existing vehicle roadway network.

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

Answer: c) No Impact

Discussion: The reasonably foreseeable methods of compliance would have no effect geometric design features. There is no impact.

d) Result in inadequate emergency access?

Answer: e) No Impact

Discussion: See responses to XVII. a and b (TRANSPORTATION/TRAFFIC), above. The Project would not have any effect on emergency access. There is no impact.

XVIII. TRIBAL CULTURAL RESOURCES – Would the project:

Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

> **a) Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**
>
> **b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision(c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Answer a) and b): No impact.

Discussion: Assembly Bill 52 (AB 52) established new requirements for assessing tribal cultural resources. AB 52 went into effect on January 1, 2015 and applies to projects initiated after July 1, 2015. The Santa Ana Water Board began its environmental review of the Proposed Project prior to July 1, 2015. Nonetheless, the Santa Ana Water Board analyzed the impacts to Tribal Cultural Resources and provided notice to the tribes that have requested notice and provided them with an opportunity for consultation. (This communication included letters to: San Manual Band of Mission Indians and Soboba Band of Luiseno Indians (dated June 26, 2018); Gabrieleno Tongva San Gabriel Band of Mission Indians (dated July 18, 2018): and Gabrieleno Band of Mission Indians-Kizh Nation (dated August 1, 2018). None of the tribes requested consultation. No impacts to tribal cultural resources will occur as the result of this project.

XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Answer: a) No Impact

Discussion: The 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.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Answer: b) No Impact

Discussion: The reasonably foreseeable methods of compliance are not contingent on and would therefore have no effect on sufficient water supplies.

c) 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: c) No Impact

Discussion: See response to XIX. a (UTILITIES AND SERVICE SYSTEMS), above.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Answer: d) Less than Significant Impact

Discussion:
BMPs for hull cleaning. Use of the container/filter method for hull cleaning generates an average of approximately 38 liters of residual waste per boat cleaned that is then dried prior to disposal in a landfill. The amount of solids in this liquid waste (that would need to be disposed of in a landfill) is highly variable and ranged from 0 to 50% of the volume in a pilot study using the container/filter method.[40] This corresponds to approximately 2 to 12 lbs per year for a 40-foot boat, depending on the amount of fouling and the type of Cu AFP used. (If we assume an average of 2 pounds dry weight per cleaning (range of 0-4 lbs (dw)), and monthly cleanings for 5,000 boats, this equates to 10,000 lbs (5 tons) of solids per month (or roughly 0.17 tons per day). It is highly unlikely that all 5,000 boats will use a container/filter system for hull cleaning;

[40] Personal communication with M. Zlotkin -Innermost Containment (Hull Cleaning Study with Container/Filter Method). 2021.

and even assuming that half of the boats (2,500) use this system equates to 5,000 lbs (2.5 tons) of solids per month (or roughly 0.083 tons per day). This is also a high estimate since it equates to the cleaning of approximately 83 boats per day which is not possible given the current limited equipment for this system. A more reasonable scenario is the cleaning of approximately 12-16 boats per day with two container/filter systems which would yield 72-96 lbs (approximately 0.04-0.05 tons) of solids per day. Nearby landfill capacity is sufficient to accommodate these wastes.[41])

The suitability (pollutant concentrations) of the waste materials for disposal will be analyzed in advance of disposal, in addition to the capacity of the disposal sites. Compliance with established state and local waste reduction programs and policies would reduce the volume of solid waste entering landfills. All projects must comply with hazardous waste disposal regulations, if applicable.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Answer: e) No Impact

Discussion: The 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.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Discussion: Newport Bay is not located within or near a state responsibility area or lands classified as very high fire hazard severity zones. None of the reasonably foreseeable methods of compliance would impact adopted emergency response or emergency evacuation plans.

Answer: a) No Impact

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Discussion: Newport Bay is not located within or near a state responsibility area or lands classified as very high fire hazard severity zones. None of the reasonably foreseeable methods

[41] Personal communication on landfill capacity with County Waste and Recycling staff at Irvine landfill facility (11,500 tons per day allowed), Oct. 2021.)

of compliance would exacerbate wildfire risks or expose project participants to pollutant concentrations from a wildfire.

Answer: b) No Impact

c)Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Discussion: Newport Bay is not located within or near a state responsibility area or lands classified as very high fire hazard severity zones. None of the reasonably foreseeable methods of compliance would require installation or maintenance of significant new land-side infrastructure. Monitoring of metals pollutant concentrations within Newport Bay would occur in tandem with current monitoring activities conducted by the County of Orange and City of Newport Beach.

Answer: c) No Impact

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Discussion: See response to XX. b (WILDFIRE), above.

Answer: d) No Impact

XXI. 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) Potentially Significant Impact

Discussion: This SED analysis concludes that there are potentially significant impacts from implementation of reasonably foreseeable methods of compliance with these TMDLs with respect to biological resources (IV. Biological Resources (a) and (b)) and hydrology and water quality (X. Hydrology and Water Quality (a)). The potentially significant impacts arise from the use of non-biocide or non-Cu biocide AFPs as a means of achieving the Cu reductions required by the TMDLs. Mitigation measures include the review and selection by the dischargers of

alternative AFPs that pose the least risk of adverse environmental impacts, if the dischargers propose to include conversions to these alternative AFPs in their TMDL implementation plans. The dischargers may also propose to limit the conversion to alternative AFPs spatially, temporally and/or in magnitude (e.g., the number of boats to be converted) such that significant adverse environmental impacts are reduced or eliminated. The dischargers will be required to consider environmental effects and appropriate mitigation measures on a project-specific level. Where significant adverse environmental impacts cannot be reduced or eliminated, findings of overriding considerations may be considered.

The implementation of mitigation measures is within the jurisdiction of the responsible agencies identified in the TMDLs (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement mitigation measures, can and should implement mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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) Potentially Significant Impact

Discussion:
A number of TMDLs have already been established for Newport Bay and its watershed, including TMDLs for nutrients, fecal coliform, sediment, organochlorine compounds, selenium, and metals. These include Cu, Zn, Cd and Pb TMDLs for Newport Bay and its watershed that were established by the USEPA in 2002[42]. Permit requirements have been established to implement these TMDLs, in whole or in part, and these requirements are being implemented by dischargers. Monitoring and evaluation are key components of these requirements/compliance activities. The Santa Ana Water Board has also issued an investigative order (Order No. R8-2018-0075) that requires monitoring and evaluation of sediment quality conditions in Upper and Lower Newport Bay pursuant to the State Water Board's Water Quality Control Plan for Enclosed Bays and Estuaries, Part 1 Sediment Quality. (This Plan has since been amended to incorporate additional requirements and has been partially re-titled "Sediment Quality Provisions"). As described in Section 4.2.1, above, actions taken to implement permit/TMDL requirements include implementation of BMPs that provide multiple water quality benefits, including the reduction of metals, sediment, bacteria, and other contaminants. These BMPs include dry weather diversions, detention ponds, sediment removal, trash management measures (e.g., street sweeping), and Low Impact Development BMPs (e.g., bioretention, bio-infiltration, rainwater harvest, downspout disconnection). Monitoring activities typically entail vehicular and vessel traffic for sample collection and transportation of samples for laboratory analyses. The implementation of these BMPs likewise generally entails vehicle traffic and construction activities that may necessitate the use of heavy equipment. Vehicle/vessel traffic and the use of equipment (potentially including gas generators used if the container/filter method is employed during hull cleaning; see Footnote 30) is expected to result in fuel

[42] Total Maximum Daily Loads for Toxic Pollutants, San Diego Creek and Newport Bay, California. U.S. Environmental Protection Agency, Region 9, 2002.

consumption and air emissions, including greenhouse gases, temporary and localized effects on noise generation, and potential water quality impacts that arise from the use of fuels and lubricants or other materials and the potential for adverse effects on the biota as the result of direct impacts (e.g., losses due to construction) or indirect impacts (e.g., adverse water quality impacts that may harm the biota).

Such impacts may also arise as the result of projects in or around Newport Bay that are under the purview of the City of Newport Beach. A list of such projects is shown in the table "CUMULATIVE PROJECTS LIST, PROJECTS WITHIN OR ADJACENT TO NEWPORT BAY", included below.

CITY OF NEWPORT BEACH, CUMULATIVE PROJECTS LIST

PROJECTS WITHIN OR ADJACENT TO NEWPORT BAY

Reasonably Foreseeable Discretionary Projects with CEQA review or Traffic Study

Project	Proposed Land Uses/Project Description	Location
Mother's Market	A coastal development permit and traffic study to modify a recently approved 5,096 sq. ft. space from office to retail use. The overall mixed-use development was approved under PA2019-249	2510 West Coast Hwy.
Newport Beach Autonation	A coastal development permit, conditional use permit, and major site development review to demolish an existing, single-story Porsche dealership and construct a new two-level, 143,494 square-foot dealership building which includes 37 service bays, show room, parts storage, offices, and parking. Parking is also proposed on the rooftop of the building. The existing 3,961- square-foot Bentley dealership is to remain.	445 East Coast Highway
215 Riverside Office and Parking Structure (PA2019023)	A coastal development permit to demolish an existing restaurant/office building, and associated surface parking lot and to construct a new 41-space two level parking structure and a 2,744- square-foot office building.	215 Riverside Avenue

The Garden Restaurant (PA2019-006)	A coastal development permit, conditional use permit, traffic study, and operator license for conversion of an existing retail building for a new 7,705- gross-square-foot fine restaurant and 2,535-square-foot roof top outdoor dining terrace.	2902 West Coast Highway
Newport Village (PA2022-0166)	A coastal development permit, major site development review, tentative tract map, traffic study, affordable housing implementation plan, and EIR for the demolition of all structures on the 9.4 acre site (with the exception of buildings at 2241 West Coast Highway and 2244 West Coast Highway). The project includes the construction of 198 residential units (17 condominiums and 181 apartment units) with 9 of the apartments set aside for very low-income households. The commercial component of the project consists of 63,285 square feet with 20,690 square feet of retail, 22,285 square feet of food and beverage uses, and 20,310 square feet of office area. Of the proposed area, 8,100 existing square feet of commercial uses would be converted to restaurant and 17,000 square feet of existing office would remain. The project includes 848 parking spaces across both parcels with 358,260 square feet of parking garage area.	2200-2244 West Coast Highway and 2001-2241 West Coast Highway (former Ardell site) Includes parcels on north and south sides of W Coast Hwy.
Discretionary Projects with CEQA review and Traffic Study APPROVED by the City and Percent Occupied		
Project	Proposed Land Uses/Project Description	Location
Ritz Carlton Residences	Conversion of existing hotel units resulting in the construction of a new 22 story building to accommodate 159 hotel branded residences.	900 Newport Center Drive
Lido Villas (DART) (PA2012-146)	Request for the demolition of an existing church and office building and legislative approvals for the development of 23 attached three- story townhome condominiums.	3303 and 3355 Via Lido Generally bounded by Via Lido, Via Oporto, and Via Malaga.
AERIE Project (PA2005-196)	Residential development including the following: (a) the demolition of the existing residential structures on the 1.4-acre site; (b) the development of 8 residential condominium units; and (c) the replacement, reconfiguration, and expansion of the existing gangway platform, pier walkway, and dock facilities on the site.	201–207 Carnation Ave and 101 Bayside Pl; southwest of Bayside Drive between Bayside Pl and Carnation Ave, Corona del Mar

Mariners' Pointe (PA2010-114)	A 19,905-sf, two-story commercial building and a three-story parking structure.	100 West Coast Highway
Back Bay Landing (PA2011-216)	Request for legislative approvals to accommodate the future redevelopment of a portion of the property with a mixed-use waterfront project. The Planned Community Development Plan would allow for the development of a new enclosed dry stack boat storage facility for 140 boats, 61,534 square feet of visitor- serving retail and recreational marine facilities, and up to 49 attached residential units.	300 E. Coast Highway Generally located at the northwesterly corner of east Coast Highway and Bayside Drive
Balboa Marina Expansion (PA2012-103) (PA2015-113)	City of Newport Beach Public Access and Transient Docks and Expansion of Balboa Marina • 24 boat slips • 14,252 SF restaurant 664 SF marina restroom	201 E. Coast Highway
Ullman Sail Lofts (PA2017-059)	A conditional use permit, minor site development review, tentative tract map, and coastal development permit to demolish an existing 9,962-square- foot commercial building and construct a new mixed-use structure with 694 square feet of retail floor area and one 2,347 square foot dwelling unit on Lot 17 and construct three residential dwelling units ranging from 2,484 square feet to 2,515 square feet over Lots 18 and 19.	410 and 412 29th Street
Newport Beach Country Club-Tennis Club Site (PA2005-140) (PA2016-124) (PA2017-091)	Demolition of existing tennis and golf clubhouses to construct a new 3,735 sf tennis clubhouse and 35,000 sf golf clubhouse. Included in the project are 27 short-term visitor-serving units (bungalows); a bungalow spa/fitness area and concierge and guest meeting facilities; and five single- family residential dwelling units (villas).	1602 East Coast Highway

Capital Improvement Projects with CEQA Review		
Project	Proposed Land Uses/ Project Description	Location
Confined Aquatic Disposal (CAD) and Harbor Dredging	An EIR for harbor dredging and safe disposal of unsuitable materials in a confined aquatic disposal facility within Newport Harbor.	Lower Newport Harbor between Lido Isle and Bay Island.
Junior Lifeguard (PA2019-124)	New 4,500 square-foot Junior Lifeguard building and recreation event center.	Balboa Village Parking Lot
Fire Station #2	New fire station replacing existing Fire Station #2	2807 Newport Blvd
Sunset Ridge Park Bridge and parking lot	Pedestrian and Bicycle Bridge across Superior Ave, parking lot, and recreation area	4850 W Coast Hwy
Big Canyon Coastal Habitat Restoration and Adaptation Plan-Phase 2A (PA2018-078)	A mitigated negative declaration for Phase 2A of habitat restoration at an 11.3-acre site located at the mouth of Big Canyon.	1900 Back Bay Drive
Arches Storm Drain Diversion (16X11)	Arches drain outlet is the endpoint for two large storm drains that collect and deliver runoff from neighboring areas to Newport Harbor. The west storm drain collects runoff from Hoag Hospital and areas upstream and the east storm drain runs along Old Newport Boulevard and into Costa Mesa upstream of 15th Street. A conceptual plan to divert dry weather flows from these two subwatersheds to the sanitary sewer system has been prepared.	Newport Boulevard north of Coast Highway
Bayview Heights Drainage Treatment (15X11)	Restores a drainage reach subject to erosion and creates a wetland at the end of the reach to benefit environmental water quality.	Headlands area of Upper Bay downstream of Mesa Drive

Big Canyon Rehab Project (15X12)	Divert about one third of the dry- weather flow from the creek into a bioreactor. The bioreactor strips selenium and other impurities from the flow. Clean flow is returned to the creek to reduce the concentration of pollutants within the stream by 30-35 percent. Storm flows from Jamboree Road also will be directed to the top level of this bioreactor/wetlands to strip roadway pollutants from the flow before the flow rejoins the creek. Partial streambed and canyon restoration are components of this project.	Big Canyon, downstream of Jamboree Road and south of Big Canyon Creek
Bay Crossings Water Main Replacement (16W12)	Replaces deteriorating water transmission mains pursuant to the Water Master Plan and Bay Crossing Water Transmission Study.	Newport Harbor
AELUP: Airport Environs Land Use Plan; CCC: California Coastal Commission; CDP: Coastal Development Permit; CUP: Conditional Use Permit; cy: cubic yards; DA: Development Agreement; DTSP: Downtown Specific Plan; EIR: Environmental Impact Report; FAA: Federal Aviation Administration; GPA: General Plan Amendment; gsf: gross square feet; HBGS: Huntington Beach Generating Station; I-405: Interstate 405 freeway; IBC: Irvine Business Complex; IS: Initial Study; ITC: Irvine Technology Center; LAFCO: Local Agency Formation Commission; LCP: Local Coastal Program; MCAS: Marine Corps Air Station; MND: Mitigated Negative Declaration; ND: Negative Declaration; PA: Planning Area; PC: Planned Community; sf: square feet; SP: Specific Plan; SR-73: State Route 73; TDR: transfer of development rights; TPM: Tentative Parcel Map; TTM: Tentative Tract Map; VTTM: Vesting Tentative Tract Map; ZC: Zone Change (Adapted from City of Newport Beach's cumulative projects list revised as of 2022-08-24)		

As discussed in III.b and III.c (Air Quality) and VIII (Greenhouse Gas Emissions) of this section, the use of BMPs to achieve compliance with the proposed TMDLs, such as the container/filter method which may employ a gas generator (see Footnote 30), will likely result in an increase in fuel consumption and air emissions, including greenhouse gases. These impacts are considered too small to contribute incrementally to concerns about cumulative air quality and greenhouse gases. Similarly, the potential impacts on transportation/traffic (XVIII), noise (XIII) and hazards/hazardous materials (IX) of implementation of the reasonably foreseeable methods of compliance with the proposed TMDLs are considered too small to result in cumulatively considerable effects.

Implementation of other established TMDLs and the projects identified in the Table above have the potential to result in cumulative adverse impacts to water quality and biological resources as the result of the generation, spill or disposal of wastes; acute and/or chronic toxicity effects on organisms that may occur as the result of improper disposal of these wastes; and the loss or reduction of habitat and organisms through construction activities (developments, BMPs). The preceding SED analysis recognizes that potentially significant adverse impacts on water quality (X.a.) and biological resources (IV. A. and IV.b.) may result from the implementation of the proposed TMDLs; these impacts would add incrementally to the impacts on water quality and biological resources from these other compliance activities.

The conversion from Cu AFPs to alternative non-biocide AFPs may result in particulate wastes (solids and/or air emissions) that have the potential to adversely affect water quality and the biota if not properly handled and disposed. However, the painting of boats and boat maintenance activities, which also result in the generation of particulates wastes, are

widespread and long-established in Newport Bay. Therefore, the cumulative effect of implementing boat conversions, if selected as part of compliance strategies by dischargers, would not be expected to have a considerable cumulative adverse environmental effect.

Standard BMPs, including the prevention of the exposure of hazardous materials to storm water, and secondary containment, can and should be employed to ensure proper handling and disposal of these wastes to avoid adverse impacts. Alternative AFPs have the potential to adversely affect biological resources, but these effects can be mitigated by careful selection and use of alternative AFPs to reduce or eliminate such effects (see IV.a. and IV.b. of this section). The cumulative impact of this reasonably foreseeable method of compliance is not expected to be considerable when viewed in light of ongoing violations of the Cu CTR water quality criteria specified, in part, to address and prevent adverse effects on the biota. Monitoring required by the proposed TMDLs~~/Action Plans~~ would result in the loss of organisms collected to assess tissue concentrations, but these losses are expected to be negligible, even when considered in light of other ongoing monitoring efforts.

b) 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: The incremental increases in greenhouse gases as the result of implementation of the proposed TMDLs are not expected to be significant alone or cumulatively considerable. As described in VIII. a, when considered in light of adopted South Coast AQMD daily significance thresholds, the greenhouse gas emissions from the project would not contribute either directly or incrementally to the adverse effects on humans and the environment resulting from global climate change. The evaluation of other potential environmental impacts considered in this analysis demonstrates that there would be no or less than significant direct or indirect impacts on human beings.

5.0 PROGRAM LEVEL ALTERNATIVES

Regulations implementing CEQA require an analysis of a range of reasonable alternative means of compliance with the TMDLs that would avoid or eliminate reasonably foreseeable significant or potentially significant environmental impacts[43]. 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 incorporate Cu TMDLs for Newport Bay. The Santa Ana Water 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 any significant or potentially significant adverse environmental effects.

The alternatives evaluated include:

1) **No Project. Do not adopt the proposed Cu TMDLs.**

2) **Adopt only an Implementation Plan for the USEPA TMDLs.**

[43] 14 CCR § 15187(c)(3).

3) **Adopt the proposed Cu TMDLs but modify the recommended Implementation Plan for the Cu TMDLs:**

   a. **Do not require any direct action by the dischargers to address Cu AFP discharges but allow implementation of the DPR maximum leach rate for Cu AFPs by itself to achieve the Cu CTR criterion in the Bay;**
   b. **Do not require any direct action by the dischargers to address Cu AFP discharges but allow implementation of DPR's maximum leach rate for Cu AFPs, in conjunction with anticipated dredging in the Bay, to achieve the Cu CTR criterion in the Bay;**
   c. **Focus implementation on specific areas of the Bay;**
   d. **Revise the compliance schedule to achieve the TMDLs.**

4) **Adopt an alternative restoration approach in lieu of TMDLs.**

5) **Recommended Action: Adopt the proposed Cu TMDLs as presented.**

Each of these alternatives is discussed below. Note that any alternative that may be considered by the Santa Ana Water Board to address Cu must provide reasonable assurance that water quality standards will be achieved and protected in the Bay. These water quality standards include the CTR criteria for Cu. While certain of the following alternatives (e.g., 3.a., 3.b.) do not meet this test and are therefore not viable, they are nevertheless discussed below as a matter of information and response to the recommendations made by other parties for the consideration of these alternatives.

5.1 No Project Alternative. Do not adopt the proposed Cu TMDLs.

Pursuant to this alternative, the Santa Ana Water Board would not act to adopt the proposed Cu TMDLs for Newport Bay. This would leave USEPA's established TMDLs for Cu for Newport Bay and San Diego Creek in place. The Santa Ana Water Board would continue to implement USEPA Cu TMDLs in relevant permits (e.g., the MS4 permit for Orange County). Permit implementation now includes and would continue to include monitoring and evaluation requirements.

The Santa Ana Water Board's actions to date to implement the USEPA Metals TMDLs, including Cu TMDLs, in waste discharge permits have focused on metal concentrations in stormwater runoff, nuisance flows and tributary runoff to achieve the allocations specified in the TMDLs for these sources. Under the No Project alternative, the Santa Ana Water Board would be required to implement the USEPA's Cu TMDLs allocation for boats, which requires a 92% reduction of the total Cu discharges from boats calculated by USEPA, as specified in their TMDLs. Since USEPA recognized that Cu AFPs on boats are the principal source of Cu inputs to the Bay, failure by the Santa Ana Water Board to address this source would not achieve the USEPA Cu TMDLs and would not fulfill the purpose of the TMDLs to achieve water quality standards.

To address Cu discharges from boats, the Santa Ana Water Board could issue waste discharge requirements, a conditional waiver of waste discharge requirements, or other orders issued

pursuant to the California Water Code. These requirements would be imposed on dischargers, including the City of Newport Beach and Orange County, and would direct these parties to take steps to reduce Cu discharges from boats to achieve the Cu allocation for boats specified in the USEPA Cu TMDLs.

Since the Santa Ana Water Board cannot dictate the particular method or manner of compliance with its requirements (Water Code Section 13360), it is likely that these new requirements would direct the dischargers to develop and submit for Santa Ana Water Board approval their own proposed implementation plans to achieve the Cu allocation for boats in the USEPA Cu TMDLs. The dischargers would be required to implement these plans upon approval. (Note that this approach is comparable to that identified in the Implementation Plan for the proposed Cu TMDLs.)

The Department of Pesticide Regulation (DPR) has issued a regulation for the maximum allowable leach rate for Cu AFPs[44]. DPR anticipates that implementation of this new leach rate will achieve compliance with the Cu CTR criterion in most marinas of the state *if BMPs are implemented concurrently* (e.g., the use of soft cloths for hull cleaning, reduced hull cleaning frequency). To ensure that DPR's maximum leach rate is effectively implemented and to make progress towards achieving the Cu CTR criterion in the Bay, the Santa Ana Water Board is not likely to approve a discharger plan proposal that does not include provisions for the implementation of BMPs. However, the extent to which the implementation of lower leach rate Cu AFPs in Newport Bay and hull cleaning BMPs will result in decreased dissolved Cu concentrations will be sufficient to achieve the Cu CTR criterion in Newport Bay is unclear.[45]

Monitoring and evaluation would be a requisite part of the implementation of the Cu allocation for boats in the USEPA Cu TMDLs. Monitoring and evaluation requirements would be imposed in the implementing order(s).

The implementation of USEPA's TMDLs would likely have more environmental impacts than the proposed Cu TMDLs:

- First, USEPA's Cu TMDLs require a higher reduction of Cu discharges from boats (92%) compared to the reduction required in the proposed Cu TMDLs (60%). Furthermore, the Santa Ana Water Board's proposed TMDLs provide that strict compliance with the Cu allocations for boats is not required, provided that consistent compliance with the Cu

[44] Department of Pesticide Regulation. 2018. Final Decision Concerning Reevaluation of Copper Based Antifouling Paint Pesticides. CA Notice 2018-03

[45] As part of its Cu AFP leach rate determination, DPR identified a number of Cu AFP Mitigation Recommendations, including the use of BMPs, which are necessary to achieve the Cu CTR criterion. In larger saltwater marinas, additional mitigation measures may be necessary to achieve the Cu CTR criterion including the potential conversion of boats to non-Cu alternatives. Appendix 2 to DPR January 30, 2014 Memorandum: Determination of Maximum Allowable Leach Rate and Mitigation for Copper Antifouling Paints per AB 425. The extent to which the implementation of lower leach rate Cu AFPs will result in decreased dissolved Cu concentrations and achieve the Cu CTR criterion in Newport Bay is unclear since DPR modeled marina scenarios with variable numbers of boats (rather than a harbor with multiple marinas like Newport Bay). The model also assumes that marinas are U-shaped, which is not the case for many marinas in Newport Bay. DPR's expectation regarding the effect of its maximum leach rate for Cu AFPs also assumes that the model assumptions employed by DPR to make the leach rate determination are appropriate for Newport Bay Thus, it is questionable whether the implementation of DPR's maximum leach rate for Cu AFPs, even with the implementation of BMPs, will result in compliance with the Cu TMDLs in Newport Bay.

CTR criterion is achieved. USEPA's Cu TMDLs do not include this provision: strict compliance with the Cu allocation for boats is required, whether or not the CTR criterion has been achieved consistently. In short, more actions to achieve USEPA's Cu allocation for boats would be expected to be necessary. Whether compliance with the USEPA's or Santa Ana Water Board's Cu reduction for boats is sought, the nature of the reasonably foreseeable methods of that compliance is expected to be the same and have the same types of potential environmental impacts, as discussed in the preceding checklist and analysis (Section 4). However, more of these implementation actions or other actions identified by the dischargers would be needed to achieve the 92% reduction required by the USEPA TMDLs. These actions may include conversions/additional conversions of boats to non-Cu AFPs and/or further reduction in hull cleaning frequency.

For both of these reasons, the potential environmental effects associated with the reasonably foreseeable methods of compliance with the Cu reduction for boats would be expected to be greater under USEPA's TMDLs.

- Second, USEPA's Cu and other metals TMDLs were based on an impairment assessment by USEPA prior to 2002 that evaluated data older than the data used in Board staff's Metals Impairment Assessment. USEPA used sediment guidelines (TELs and ERLs rather than ERMs) that are more restrictive and no longer used by the State Water Board or Regional Boards to determine sediment impairment. USEPA's TMDLs for Cu include requirements and allocations for Cu due in part to USEPA's concerns regarding sediment quality (as confirmed in USEPA's approval of the State Water Board's Clean Water Act Section 303(d) listing decisions (2002, 2006, 2010)). Thus, implementation of USEPA's TMDLs requires actions to address sediment impairment, likely by dredging. Dredging and other sediment remediation could result in additional vessel traffic, air and greenhouse gas emissions, temporary increases in noise and light and glare, production of odors, visual impacts, impacts on biota and habitats, and impacts on water quality. In contrast, the proposed Cu TMDLs require monitoring and evaluation to reassess sediment conditions in accordance with the Enclosed Bays and Estuaries Plan: Sediment Quality Provisions. If the initial evaluation results in a determination of impacted sediment, then additional monitoring and evaluation is required to assess impairment. Whether any subsequent regulatory action, including revision of the Cu TMDLs and Implementation Plan, is necessary to address sediment concerns is contingent on the findings of this sediment assessment. Any such subsequent additional regulatory action would be subject to environmental review.

The No Project alternative, therefore, would not alleviate the potential environmental effects identified in this SED, and as stated, the No Project alternative would likely have greater potential to result in adverse environmental effects. Additionally, this alternative would not meet the objective of the Proposed Project to revise the 2002 USEPA TMDLs to reflect new data.

5.2 Adopt only an Implementation Plan for the USEPA Cu TMDLs

USEPA's TMDLs do not include an implementation plan since these plans are within the purview of the state. Pursuant to this alternative, the Santa Ana Water Board would not act to adopt the proposed Cu TMDLs for Newport Bay. Nor would the Santa Ana Water Board

propose any changes to the USEPA TMDLs themselves. Instead, the Santa Ana Water Board would consider adoption of a Basin Plan amendment to incorporate an implementation plan for the USEPA Cu (and likely other metals) TMDLs. (While staff could identify a separate implementation plan for USEPA's Cu TMDLs, the more efficient and therefore more likely approach would be to incorporate requirements pertaining to all metals addressed by USEPA in a single implementation plan. In part, the efficiency arises from the fact that sampling and analysis for Cu can be easily accompanied by that for all the metals without substantial additional effort or cost.) If approved, this implementation plan would be incorporated in the Basin Plan and thereupon form the basis for further regulatory action by the Santa Ana Water Board to implement the USEPA TMDLs.

An implementation plan for the USEPA metals TMDLs would be expected to address/include:

1. All metals for which USEPA established TMDLs.

2. Time schedule(s) for the actions that will be taken under the implementation plan to achieve the TMDLs.

3. Monitoring and evaluation requirements to assess water quality conditions and the efficacy of tasks implemented to meet the USEPA TMDLs. This would include monitoring and evaluation of Hg, As and Cr, for which data demonstrate the need for investigation and assessment.

4. Implementation plan tasks, as described in 5.1 above, including the issuance of orders to achieve USEPA's specified Cu allocation for boats.

The potential environmental effects of this alternative would be the same as those identified under the No Project Alternative (5.1). Both of these alternatives would likely have more environmental impacts than the proposed Cu TMDLs.

The alternative to adopt an implementation plan for the USEPA TMDLs, therefore, would not alleviate the potential environmental effects identified in this SED, and as stated, this alternative would have greater potential to result in adverse environmental effects. And, as with the No Project alternative, this alternative would not meet the objective of the Proposed Project to revise the 2002 USEPA TMDLs to reflect new data.

5.3 Adopt the proposed Cu TMDLs but modify the recommended Implementation Plan for the proposed Cu TMDLs:

a. Do not require any direct action by the dischargers to address Cu AFP discharges but rely on implementation of DPR's maximum leach rate for Cu AFPs, without implementing DPR's recommended mitigation measures;
b. Do not require any direct action by the dischargers to address Cu AFP discharges but rely on implementation of DPR's maximum leach rate for Cu AFPs, in conjunction with anticipated dredging in the Bay;
c. Focus implementation on specific areas of the Bay;
d. Revise the compliance schedule to allow more time to achieve the TMDLs.

5.3.a. Do not require any direct action by the dischargers to address Cu AFP discharges but rely on implementation of DPR's maximum leach rate for Cu AFPs, without implementing DPR's recommended mitigation measures:

The proposed Implementation Plan for the proposed Cu TMDLs requires, in part, that dischargers, including the City of Newport Beach and Orange County, submit their own implementation plan(s) whereby these parties would take actions to achieve consistent compliance with the Cu CTR criterion (and the Cu allocations for boats); (see discussion of proposed TMDL provisions in 5.1). The dischargers would implement these plans upon Santa Ana Water Board approval. Under this alternative (5.3.a), this requirement for plan submittal and implementation, as now constituted, would be removed. Instead, the Implementation Plan for the proposed Cu TMDLs would be revised to identify the implementation of DPR's maximum leach rate for Cu AFPs over time as the means to achieve the Cu CTR criterion and boat allocations. Monitoring and evaluation efforts would continue to be required.

The 5.3.a. "no direct action" alternative is not viable as it would not meet the objective of the Proposed Project to meet the Cu CTR criterion, as well as the Cu allocation for boats. BMPs must be enacted and employed as part of any alternative implementation plan to properly implement DPR's maximum leach rate for Cu AFPs and to achieve/make progress towards achieving CTR compliance.

DPR anticipates that implementation of the maximum leach rate for Cu AFPs, *with concurrent use of hull cleaning BMPs that is built into DPR's maximum leach rate*, will achieve the Cu CTR criterion in most marinas in the state over time (marinas with less than 1270 boats)[46]. This may be true in Newport Bay; however, the extent to which the implementation of lower leach rate Cu AFPs in Newport Bay will result in decreased dissolved Cu concentrations and achieve the Cu CTR criterion is unclear since DPR modeled marina scenarios with variable numbers of boats (rather than a harbor with multiple marinas like Newport Bay). The model also assumes that marinas are U-shaped, which is not the case for many marinas in Newport Bay. DPR's expectation regarding the effect of its maximum leach rate for Cu AFPs also assumes that the model assumptions employed by DPR to make the leach rate determination are appropriate for Newport Bay Thus, it is questionable whether the implementation of DPR's maximum leach rate for Cu AFPs, even with the implementation of BMPs, will result in compliance with the Cu TMDLs, and it would likely take years to confirm whether or not that is the case, once implementation has begun.[47]

As stated above, failure by the Santa Ana Water Board to require the use of BMPs (which are included in DPR's determination of the maximum leach rate for Cu AFPs), would not comport with DPR's determination and would not achieve the purpose of the Project to achieve the Cu CTR criterion/TMDLs.

[46] DPR determined that in larger marinas in the State, some conversions to non-Cu AFPs are likely to be needed to achieve the CTR criterion.

[47] Full implementation of the new leach rate began June 30, 2020, when existing stocks of higher leach rate Cu AFPS had to be removed from the shelves and can no longer be sold or used. A minimum five-year period from this date is likely to be necessary to assess the effects of implementation of the new leach rate on Cu concentrations in the Bay.

This alternative is not viable since it does not meet the Proposed Project's objective to achieve and protect water quality standards in the Bay, including water quality objectives and beneficial uses.

5.3.b. Do not require any direct action by the dischargers to address Cu AFP discharges but rely on implementation of DPR's maximum leach rate for Cu AFPs, in conjunction with anticipated dredging in the Bay.

The proposed Implementation Plan for the proposed Cu TMDLs requires, in part, that dischargers, including the City of Newport Beach and Orange County, submit their own implementation plan(s) whereby these parties would take actions to achieve the Cu allocation for boats and/or consistent compliance with the Cu CTR criterion (see discussion of proposed TMDL provisions in 5.1). The dischargers would implement these plans upon Santa Ana Water Board approval. Under this alternative (5.3.b.), this requirement for plan submittal and implementation, as now constituted, would be removed. Instead, the proposed Cu TMDLs Implementation Plan would be revised to identify the implementation of the DPR maximum Cu AFP leach rate over time, coupled with dredging in the Bay, as the means to achieve the Cu CTR criterion/allocation. Monitoring and evaluation efforts would continue to be required.

The City of Newport Beach is working with responsible agencies to develop a proposal to dredge parts of the Lower Bay and has recommended that this future dredging, coupled with the application of DPR-compliant Cu AFPs be considered as the proper implementation plan to achieve the CTR criterion, with no direct action by the City or others to reduce Cu discharges from Cu AFPs, by strategies such as the use of BMPs or conversions to non-biocide or non-Cu AFPs). As described in Section 3.1. Environmental Setting, the future dredging of the main navigational channels in the Bay remains in the planning stages since suitable disposal sites for all the dredged materials have not been identified. The proposed dredging focuses on increasing the depths in navigational channels, which, if and when implemented, can reasonably be expected to increase circulation in the dredged areas. On a short-term basis, dredging could result in the release of Cu from disturbed sediments. Over the long-term, the dredging project may result in reduced pollutant concentrations in the water column, including reduced Cu concentrations, such that compliance with Cu CTR criterion might be achieved in the dredged (and possibly adjacent) areas without BMP implementation. However, the nature, timing and scope of this dredging is uncertain, and the degree and scope of possible improvement in water quality that might result from this dredging is speculative and cannot be relied upon, individually or in concert with the use of DPR-compliant Cu AFPs, to achieve the Cu CTR criterion throughout the Bay. In fact, water quality data argue against the viability of the dredging option as a method of compliance with the recommended Cu TMDLs.

As described in Section 3.1 and the Staff Report 2022 (Appendix A; Section 1.1. Environmental Setting), major dredging projects in both the Upper and Lower Bay have been conducted since 2006. Nevertheless, water quality data continue to confirm that the Bay is impaired due to dissolved Cu. These data include those initially assessed by Santa Ana Water Board staff (2002-2014; see Staff Report 2022, Section 4); and data assessed by State Water Board staff for the 2006, 2010 and 2014-2016 Clean Water Act Section 303(d) lists of impaired waters (see Table 3-1, Staff Report 2022). Data collected by Anchor QEA in 2015 and 2016 for the City of Newport Beach, and data collected by DPR in 2019 also show that the Bay is still impaired for dissolved Cu. This likely reflects the fact that Cu discharges from Cu AFPs on boats continue to be the most significant source of Cu to the Bay. These discharges have continued to dominate Cu water quality conditions in the Bay, irrespective of significant dredging projects. Further, as

discussed in alternative 5.3.a, the expectation that the implementation of DPR's maximum Cu leach rate for AFPs will achieve the Cu CTR criterion in most marinas in California is contingent on the concurrent implementation of BMPs. To ensure proper implementation of DPR's leach rate and progress to achieve the Cu CTR criterion, the Santa Ana Water Board must require that BMPs be implemented by the dischargers.

Since this alternative cannot provide reasonable assurance that water quality standards in the Bay will be achieved and protected, both because of the uncertain and speculative nature of potential future dredging and its effects on Cu water quality, and the lack of commitment to BMP implementation, it is not a viable alternative.

5.3.c. Focus implementation on specific areas of the Bay

The Santa Ana Water Board could consider revising the Implementation Plan for the proposed Cu TMDLs to direct actions in focused areas of the Bay where Cu quality conditions are of particular concern.

However, this alternative is not substantively different from the proposed Cu TMDLs Implementation Plan and thus would have no differential effect with respect to potential environmental impacts. The recommended Implementation Plan requires the dischargers to submit proposed plan(s) whereby compliance with the Cu CTR criterion will be achieved. The implementation plans to be proposed by dischargers and implemented by those parties upon Santa Ana Water Board approval can and should focus on actions in areas of highest concern. Actions taken in these impaired areas may be sufficient to achieve the Cu CTR criterion. Bay-wide monitoring and evaluation remains appropriate to assess Cu water quality conditions over time and to determine whether focused actions in areas of highest concern are sufficient to ensure consistent compliance with the Cu CTR criterion. The proposed Implementation Plan does not limit implementation actions to these focused areas, should monitoring and evaluation demonstrate that actions are needed elsewhere. By contrast, under the 5.3.c. alternative, if additional actions outside the identified areas of concern are shown to be necessary, amendment of the Implementation Plan would become necessary. This would delay achieving the principal objective of the proposed Cu TMDLs which is to achieve the established, applicable narrative and numeric water quality objectives and thereby correct impairment in waters due to Cu.

In short, this alternative is already available under the terms of the proposed Cu TMDLs Implementation Plan. The potential environmental impacts would not be reduced under the 5.3.c. alternative, and achieving water quality standards, the objective of the Project, could be delayed.

5.3.d. Revise the compliance schedule to allow more time to achieve the Proposed TMDLs

At present, these schedules are as follows: final compliance to be achieved as soon as possible but no later than 12 years from the effective date of the TMDLs (i.e., upon final approval of the TMDLs by USEPA); and a phased schedule to achieve 60% reduction of Cu discharges from boats:

- 20% reduction no later than 4 years from TMDL effective date
- 40% reduction no later than 8 years from TMDL effective date
- 60% reduction no later than 12 years from TMDL effective date (final compliance date)

The proposed schedules are intended to allow time for development, implementation and adaptive management of dischargers' implementation plans to achieve reductions in Cu discharges from boats. If boat conversions to non-Cu AFPs are selected by dischargers as a compliance strategy, this schedule allows for repainting in accordance with typical, regular boat repainting schedules. The proposed schedules also allow for the implementation of DPR's maximum leach rate for Cu AFPs, with BMP implementation, and for the consideration of a site-specific water quality objective for Cu, if pursued by the dischargers. The maximum 12-year schedule also allows for adaptive management of discharger strategies, where warranted on the basis of monitoring and evaluation results.

These interim and final proposed compliance schedules take into consideration the time likely to be needed to propose and implement strategies to achieve the interim and final reductions in Cu discharges. The timelines identified in other established Cu TMDLs, e.g., Marina del Rey, Shelter Island Yacht Basin, were considered in establishing these schedules. By expressing the proposed timelines as "as soon as possible but no later than" the specified dates, the proposed compliance schedule requires that control actions be implemented before the stated compliance date where possible. The extent to which the implementation plans to be proposed by the dischargers meet this requirement will be evaluated upon plan submittal; where appropriate, the Board will require modifications to the plans. (An alternative of shortening the interim and final compliance timelines is thus effectively a part of the proposed Cu TMDLs Implementation Plan and would not have different potential environmental effects.)

Extending the interim and/or final compliance schedules for Cu reductions might allow a better evaluation of the effects of the implementation of DPR's maximum leach rate for Cu AFPs (which must include the use of BMPs; see 5.3.a.), future dredging and/or other actions on Cu concentrations in the Bay. (See discussion of alternatives 5. 3.a. and b.) If these or other actions are sufficient to achieve compliance with water quality standards, including the Cu CTR criterion, which is the objective of the proposed Project, then the need for other supplemental actions that may harm the environment would be reduced/eliminated. This is effectively a "wait and see" alternative that is not consistent with the goal of the project to achieve water quality standards in as timely a manner possible. For this reason, this alternative is not considered viable and must be rejected from consideration. However, as recognized in the proposed Cu TMDLs, the specified compliance schedules are subject to modification in the future, if warranted by data or other information regarding the implementation of control actions that demonstrate that water quality standards will be achieved in the Bay, and/or that potential environmental impacts would be reduced as the result of compliance schedule modifications.

5.4 Adopt an alternative restoration approach in lieu of TMDLs

In theory, an alternative restoration approach to address Cu in the Bay could be developed and considered, in lieu of the proposed Cu TMDLs. This approach might entail the issuance of waste discharge requirements to dischargers, or formal commitments by dischargers to implement specific projects needed to achieve water quality standards. Any consideration of an alternative restoration approach would require the demonstration that there would be at least equivalent

assurance that implementation of the restoration approach would result in achieving and protecting water quality standards, in a timely manner.

Because the principal source of Cu inputs to the Bay is Cu AFPs on boat hulls, any restoration approach that does not address this source will not provide the reasonable assurance that water quality standards will be achieved and protected. Therefore, the reasonably foreseeable methods of compliance with the proposed TMDLs that are evaluated in this SED would continue to be necessary under an alternative restoration approach for Cu in the Bay. This means that the potential adverse environmental effects associated with such an alternative restoration approach are not likely to be different from those identified in Section 4 for the proposed Cu TMDLs. Thus, while alternative restoration approaches could be considered, they would be expected to include the same actions as contemplated in the proposed TMDLs and, as such, the potential environmental effects would be expected to be the same.

5.5 Recommended Action. Adopt the proposed Cu TMDLs as presented.

The recommended alternative is the adoption of the proposed Cu TMDLs evaluated in this SED. These TMDLs were initially proposed and distributed for comment on August 30, 2016, but with substantive subsequent revisions based on consideration of additional data and information and the comments received. The revised amendments are described in the Staff Report 202**2**~~1~~ (Appendix A of this SED).

Cu TMDLs continue to be required since dissolved Cu exceeded the saltwater CTR criterion in both the Upper and Lower Bay in multiple data sets, including Water Board staff's Impairment Assessment, Department of Pesticide Regulation data (2019), Anchor QEA's study for the City of Newport Beach (June 2015 and February 2016). Sediment Cu exceeded the ERM sediment guidelines[48] and sediment toxicity was present, but ERM exceedances were not paired with toxicity; therefore, sediment impairment could not be determined based on the State Water Board's State Listing Policy. However, the data indicate that continued monitoring and evaluation is required due to the ERM exceedances and the presence of sediment toxicity in the same areas. Monitoring is to be conducted in accordance with the Enclosed Bays and Estuaries Plan – Sediment Quality Provisions. If sediments are found to be impacted, as set forth in the Sediment Quality Provisions, stressor identification studies are required. These data will be used to assess sediment quality conditions and to determine whether any additional action is necessary.

The recommended Cu TMDLs are scientifically and technically defensible, in contrast to USEPA's Cu TMDLs, as described above. Future refinements to the proposed TMDLs are expected as data and information are collected during implementation.

The recommended Cu TMDLs Implementation Plan relies on a flexible approach that enables dischargers to develop and propose their own strategies whereby compliance with the TMDL requirements will be achieved. These strategies may also be revised over time as data and

[48] NOAA SQuiRTS, 1999 (updated in 2008). National Oceanic and Atmospheric Administration, Screening Quick Reference Tables. National Oceanic and Atmospheric Administration, Coastal Protection and Restoration Division, Washington, D.C.

information are obtained. In part, revisions to these strategies may be considered in order to address any unanticipated adverse environmental impacts associated with site-specific projects.

Reliance on USEPA's Cu TMDLs is no longer scientifically defensible and has the potential to result in unnecessary implementation of tasks and schedules that will (1) use limited resources to achieve unnecessary requirements and, (2) have the potential to result in adverse environmental impacts. This is not in the interest of the public or environment.

Finally, as explained in the preceding analysis, none of the alternatives considered would be environmentally superior to the Recommended Action to adopt the proposed Cu TMDLs and most would not meet the Proposed Project objectives to achieve established, applicable narrative and numeric water quality objectives and thereby correct impairment in waters due to Cu.

Other Cu TMDL Alternative Considerations

Board staff considered various alternatives in developing the proposed Cu TMDLs (and Non-TMDL Action Plans for Zn, Hg, As and Cr, which are no longer a part of the Proposed Project; see below) that include extensive consideration of alternative allocation approaches, implementation strategies, and compliance schedules. 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. These alternative considerations are presented in detail in the draft Staff Report prepared in 2016 for the proposed Cu TMDLs (that included Non-TMDL Action Plans for Zn, Hg, As and Cr that were being considered at that time) (draft Staff Report 2016[49] and the Staff Report 2022 (Appendix A of this SED). Revisions to the proposed Cu TMDLs were made in response to consideration of additional data and information and the comments of interested parties, including USEPA.

The Proposed Project includes revisions that generally have the effect of reducing the potential environmental impacts of the Basin Plan amendments initially proposed:

- First, the Cu TMDLs now proposed no longer include requirements based on findings of sediment impairment, and the TMDLs do not require corrective action, such as dredging or other physical measures. Dredging and other physical measures designed to address sediment impairment typically require heavy equipment (e.g., to extract sediment, the use of barges and other vessels or vehicles to transport sediments to appropriate disposal sites, and subsequent vehicle and vessel traffic associated with monitoring and investigation that would naturally follow implementation of the physical measures). The potential adverse environmental effects of these physical measures are identified in 5.3.b., above. Since, as stated, the proposed TMDLs no longer include requirements to take corrective action at this time, the potential adverse effects associated with these actions have been eliminated. Monitoring and evaluation continue to be required to assess sediment quality and to determine whether the Santa Ana Water Board will need to require corrective action for sediment in the future. Such future requirements for sediment, if warranted, would be subject to environmental review pursuant to CEQA and/or the State Water Board's SED regulations.

[49] 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.

- Second, the Cu TMDLs now proposed reflect significant changes resulting from revisions to the estimated number of boats that occupy Newport Bay and the appropriate margin of safety. Taken together, these revisions result in a significant reduction in the estimate of the Cu load being discharged to the Bay from Cu AFPs, and a significantly higher allocation for boats. (See detailed discussion in the Staff Report 2022, Appendix A of this SED). In turn, the actions that will be necessary to address reductions from Cu AFPs are expected to be less; the environmental effects of these reduced actions are reasonably expected to be reduced as well.

[As indicated above, the Proposed Project has been revised to eliminate the Non-TMDL Action Plans for Zn, Hg, As and Cr. This change was based on further discussion with and clarification by USEPA that these proposed Action Plans would not suffice to achieve one intended purpose, which was to supplant the USEPA established TMDLs for Zn, and the separate determination by Water Board staff that the data sought by the proposed Action Plans for these metals could be obtained as effectively by issuance of separate, appropriate investigative orders.]

Again, it is expected that refinements to the Cu TMDLs, if approved and implemented, will be considered over time as new data and information become available. Similarly, the recommended flexible, adaptive management implementation approach specified in the proposed Cu TMDLs Implementation Plan envisions that alternative compliance strategies can be considered if and as found to be appropriate and necessary, based on consideration of the environmental effects and/or efficacy of the compliance strategies that are implemented. Refinements to the TMDLs will be subject to future CEQA analysis on a programmatic level; site-specific projects will continue to be subject to site-specific CEQA review by the responsible dischargers.

In summary, consideration of a number of alternative TMDL elements and approaches has already occurred in the development and subsequent revision of the Proposed Cu TMDLs, and the net effect is a relative reduction of the potential adverse environmental effects as compared to the TMDLs initially proposed.

6.0 ECONOMIC CONSIDERATIONS

Copper (Cu) TMDLs

Expenditures of funds and other resources (staff/consultant time) associated with the Cu TMDLs would result from the need to develop proposed implementation and monitoring plans by the dischargers, and the implementation of those plans upon approval by the Regional Water Board.

The City of Newport Beach provided cost information for the implementation of various Cu TMDLs tasks[50]; however, these cost estimates from the City were based on the Basin Plan amendment initially proposed in 2016, that included both Cu TMDLs and Non-TMDL Action

[50] Anchor QEA, LLC. Newport Bay Copper (Cu) TMDLs and Non-TMDL Action Plans for Zinc (Zn), Mercury (Hg), Arsenic (As), and Chromium (Cr), October 11, 2016 (Attachment 2 to the City of Newport Beach's comment letter, October 14, 2016.)

Plans for Zn and Hg, As and Cr. These cost estimates do not reflect the extensive changes to the proposed Basin Plan amendments that reduce or eliminate specific implementation tasks for the Cu TMDLs and remove the Non-TMDL Action Plans in their entirety. The result of changes to the Basin Plan amendments proposed initially include:

1) reduced monitoring and analyses (due to the removal of the Action Plans for other metals);
2) removal of the requirement to develop and implement a sediment remediation plan; this requirement was based on initial findings of sediment impairment that have since been revised to require further monitoring and evaluation to evaluate impairment;
3) removal of fish/mussel tissue monitoring specifically related to Cu;
4) removal of the tasks to work with DPR, State Board and USEPA to restrict the sale and use of Cu antifouling paints (Cu AFPs) in Newport Bay;
5) removal of the Special Studies task to estimate the potential Cu load from vegetation (including algae) and in-Bay sediments; and,
6) reduced costs related to data analysis and reports.

The City's total estimated 2016 costs over 5 years for the implementation tasks was $3,279,250 and included:

1) Development of an implementation plan to achieve Cu AFP reductions: $100,000
2) Development of a sediment remediation plan: $75,000
3) Monitoring and special studies: $1,844,250, including:
    a. Water Quality monitoring (5 yrs) $660,000
    b. Sediment monitoring (3 yrs) $242,750
    c. Fish and mussel tissue monitoring (3 yrs) $214,500
    d. Special study to evaluate Cu loading from sediment: $44,000
    e. Special study to evaluate Cu loading from vegetation: $99,000
    f. Sampling Plan/QAPP (1x) $35,000
    g. Data Analysis (5 yrs) $202,500
    h. Status Meetings (5 yrs) $42,500
    i. Reports (5 yrs) $215,500
    j. Project Management (5 yrs) $88,500
4) Lobbying with other agencies (task 3, above): $250,000 ($50,000/yr)
5) Diver certification program:
    a. Development of program: $120,000
    b. Implementation/enforcement of program: $500,000 ($100,000/yr)
6) Education programs:
    a. Evaluate existing/develop programs: $45,000
        1. Public outreach (4 meetings/year): $150,000 ($30,000/yr)
        2. Website set-up/update: $10,000; $100,000- 125,000 ($20-25,000/yr)
        3. Postings: $15,000
        4. Individual grant program (proposed by City): $75,000 + undetermined implementation costs

As stated above, a number of the tasks included in these cost estimates have been removed from the proposed Basin Plan amendment (items 2; 3.c,d,e and part of f, j; 4), reducing the total 5 year estimate by at least $758,000. In addition, costs of the water quality and sediment

monitoring (3.a,b), and data analysis/reports would be reduced since the City's estimates were based on monitoring and analysis for Cu, Zn, Hg, As and Cr, and the revised proposed TMDLs only address Cu ($330,000 in savings if we assume 25% reduction in these tasks).

In addition, some of the monitoring and analyses required by the proposed TMDLs is already being conducted on an annual basis by the County of Orange, and this monitoring can be used, at least in part, to satisfy these TMDLs. Note also that the cost estimates initially presented were provided by a consultant to the City. It is not clear whether and to what extent the costs identified reflect consideration of the potential for coordination with other dischargers (e.g., the County of Orange) or integration of activities (e.g., monitoring and evaluation) with other ongoing or proposed activities.

In comparison, annual costs for the Shelter Island Cu TMDL (San Diego, CA) ran approximately $125,000 to 150,000 for the Cu Reduction Program and $100,000 for monitoring[51]. The initial project start-up was approximately $500,000, which included approximately $300,000 in grant funds.

The proposed Cu TMDLs allocate Cu discharges to the Bay from various sources, the most significant of which are boats and tributary runoff (approximately 18,000 and 3,000 lbs/yr, respectively). The proposed TMDLs require a 60% reduction in Cu discharges from boats, while no reduction of Cu discharges is required for tributary and storm drain runoff.

USEPA established TMDLs for Cu, and other metals, for Newport Bay and its watershed in 2002. The USEPA Cu TMDLs require a 92% reduction in Cu inputs from boats. If the proposed Cu TMDLs are not approved, then the USEPA Cu TMDLs must be implemented/continue to be implemented. (Actions taken to address other established requirements, including other USEPA TMDLs for Newport Bay and its watershed, will also be implemented/continue to be implemented. See below.)

As described above (XXI. Mandatory Findings of Significance, b)), projects have already been implemented in the Newport Bay watershed in response to other TMDLs and orders of the Water Board (e.g., Order No. R8-2018-0075) to address pollutants (including metals, nutrients and sediment) in tributary runoff to the Bay. Existing legislation (SB 346) also requires the reduction of Cu inputs to the environment from vehicle brake pads, which is expected to reduce Cu inputs to tributary runoff and hence Cu inputs to the Bay. These actions will continue to be implemented, irrespective of the implementation of the Cu TMDLs, if approved. As stated above, no further reduction of Cu inputs from tributary runoff is required by the proposed Cu TMDLs and the proposed TMDLs will not trigger additional economic demands to address this source.

Monitoring and evaluation
Approval of the proposed Cu TMDLs will trigger costs associated with the development and implementation of tasks to achieve reductions in Cu discharges from boats (though these reductions are less stringent, and thus likely less costly, than those required by USEPA's Cu TMDLs). The proposed TMDLs will also require the expenditure of resources to conduct monitoring and evaluation (in coordination with and in addition to monitoring and evaluation conducted by the County).

[51] Personal communication with the Port of San Diego. May 2021.

Tasks to Reduce Cu discharges from boats
This SED analysis describes the potential environmental impacts of reasonably foreseeable methods of compliance with the required reduction of Cu discharges from boats (See Section 4). These methods include: 1) the use of BMPs during hull cleaning, the development and implementation of a diver certification program, and the development and implementation of a diver education program; 2) the development and implementation of an education program for boaters, marina owners and operators and boatyard owners/operators; 3) the conversion of boats from Cu AFPs to non-biocide AFPs (or lower leach rate Cu AFPs); and 4) the monitoring and evaluation of water and sediments. Monitoring of water is needed to assess receiving water conditions and the need for and efficacy of control measures implemented to achieve these TMDLs; monitoring of sediments is also required based on data on Cu concentrations in sediment and on toxicity.

Monitoring costs can be minimized by the integration of monitoring and evaluation efforts with the extensive ongoing monitoring conducted pursuant to existing permit and/or TMDL requirements and special investigations such as the Southern California Bight studies. Dischargers identified in the proposed TMDLs who are responsible to implement monitoring and evaluation requirements can also minimize costs and optimize resource utilization by integrating their monitoring efforts.

6.1 The use of BMPs during hull cleaning, the development of a diver certification program and the development of a diver education program

(1) Use BMPs during hull cleaning (all divers), such as soft cloths or a container/filter method

Soft cloths. The use of soft cloths for hull-cleaning should have no substantial cost increase. Additionally, the use of soft cloths will decrease the amount of Cu released during hull cleaning and will likely result in less frequent repainting.

Container/filter method. The use of a container/filter system will cost approximately double that of a routine hull cleaning by a diver (~$2/linear foot); 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 non-biocide 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.

(2) Develop a diver certification program and education program

The development and implementation of a diver certification program would entail an estimated cost of $620,000 over five years (2016 cost estimates from a contractor to the City of Newport Beach; see above). This cost might be reduced if developed and implemented by City/County staff. The cost of this program could possibly be offset by certification fees charged to divers, and/or grant funds. The cost estimates provided by the City contemplate a diver permit fee system at $250/diver/year. Diver education is expected to be an integral component of the certification program.

6.2 Develop an education program for boaters, marina owner/operators and boatyard staff

The development and implementation of education programs for boaters, marina and boatyard owners and operators will be an additional cost. Education programs were conducted in 2011-12 in Newport Bay by Orange County Coastkeeper (Coastkeeper) as part of a 319(h) grant to convert boats from Cu AFPs to non-biocide AFPs in one target marina in Lower Newport Bay[52]. Coastkeeper's estimated annual cost to conduct a boater education program is approximately $30 to 40K per year. Costs of an education program could be reduced if the dischargers worked in coordination with Coastkeeper to revive their education program and/or if grant funds are obtained.

6.3 The conversion of boats from Cu AFPs to non-biocide AFPs or lower leach rate Cu AFPs

(1) Convert from Cu AFPs to non-biocide AFPs

One of the reasonably foreseeable methods of compliance with the allocations for Cu discharges from boats is the conversion of boats from Cu AFPs to non-biocide AFPs. These paints/coatings may cost more to apply initially but may be less expensive than Cu AFPs in the long term.

Stripping Costs. There will be an initial cost to convert from Cu to non-biocide AFPs since the old Cu AFPs must be stripped before the application of a non-biocide paint. The cost of stripping Cu AFPs to reapply Cu AFPs (or prior to application of non-biocide paints) are on average $6,000 for a 40 ft. boat. Note that Cu AFPs are also stripped approximately every 7 years; therefore, non-biocide paints could be applied to boats when Cu AFPs would normally be stripped as part of the routine maintenance or to new boats to avoid these initial stripping costs.
Note that once applied, non-biocide paints do not need to be stripped prior to reapplication.

Paint Costs. Paint costs may be somewhat higher for non-biocide paints over Cu AFPs; however, non-biocide paints need to be reapplied less frequently than Cu AFPs so the price of a non-biocide paint could be less expensive than Cu AFPs over the long-term depending on the non-biocide paint used. (Cu AFPs need to be repainted approximately every 2 to 3 years, while non-biocide paints are repainted approximately every 5 to 7 years.) Costs of some non-biocide paints are shown below; average Cu AFP cost is $300 per gallon.

Costs of applying alternative antifouling coatings[53]

Type	Cost/gal	Coverage (square feet)
Epoxy	$120 - $182	315-1,574
Ceramic-Epoxy	$127	136
Siliconized Epoxy	$246 - $455	144-220

[52] Orange County Coastkeeper and Candelaria. March 2013. Newport Bay Copper Reduction Study. Report for Santa Ana Regional Water Board.

[53] Cost estimates from personal communication with boatyard owner in Newport Bay, 2020, 2021. Revised from Table 5-2 in Reconsideration of the Total Maximum Daily Load for Toxic Pollutants in Marina del Rey, California Regional Water Quality Control Board – Los Angeles Region, April 2015

Polymer Based	$52	400

Application Costs. In addition, some non-biocide paints must be sprayed on rather than rolled-on (like Cu). The application of a non-biocide paint by spraying is somewhat more expensive than the cost of rolling on a Cu AFP – approximately $100 per foot vs $70 per foot, respectively. Again, Cu AFPs need to be repainted approximately every 2 to 3 years, while non-biocide paints are repainted approximately every 5 to 7 years.
For a 6- to 7-year cycle and a 40-ft. boat, the application cost would be approximately $4,000 for a non-biocide paint and $5,600 for a Cu AFP.

Hull Cleaning Costs. In general, non-biocide paints require more frequent cleaning than Cu AFPs (every 2 weeks vs monthly); therefore, cleaning costs for non-biocide paints will be higher than for Cu AFPs. For a 40 ft boat at $3 per linear ft, the annual cleaning cost would be $2,880 for a non-biocide paint and $1,440 for a Cu AFP.

Although non-biocide AFPs cost more to apply initially and must be cleaned more often, they are more durable and can cost less than Cu antifouling paints over the long term (Carson[54], USEPA[55]). In addition, costs of alternative coatings appear to have decreased over the past several years (Johnson and Gonzalez[56],[57]). See also the economic analysis by G. Horner[58].

The Los Angeles County Department of Beaches and Harbors recently published a final report on the results of the first phase of its Marina del Rey Pilot Hull Paint Study[59]. In part, the Report provides information on the costs of paints evaluated in the study (Table 45. Paint Costs). The Report states that when evaluating lifecycle costs, non-biocide hull paints may provide cost savings that are not reflected in the initial cost comparison with Cu AFPs. While non-biocide hull paints generally have higher initial painting costs, these paints may last as much as 5 times longer than Cu AFPs and maintenance costs may be lower. However, the report acknowledges that the potential ongoing cost savings and longevity of non-biocide AFPs need to be studied further before a valid, long-term cost comparison with Cu AFPS can be made.

[54] Carson RT, Damon M, Johnson LT, Gonzalez JA. 2009. Conceptual Issues in Designing a Policy to Phase Out Metal-Based Antifouling Paints on Recreational Boats in San Diego Bay. *Journal of Environmental Management* 90: 2460-2468.

[55] USEPA, January 2011a. Final Report: Safer Alternatives to Copper Antifouling Paints for Marine Vessels. Project NP00946501-4.

[56] Johnson, L. T. and J. A. Gonzalez. 2004b. Staying Afloat with Nontoxic Antifouling Strategies for Boats. Regents of the University of California, California Sea Grant College Program Report. No. T-054: 21.

[57] Johnson, L. T. and J. A. Gonzalez. 2008. Alternative Antifouling Strategies Sampler. Regents of the University of California, California Seat Grant College Program Report. No. T-065: 9.

[58] Horner, G. February 2014. An assessment of the economic impact of complying with the copper load allocations assigned to discharges from boats in the Marina del Rey Harbor.

[59] Marina del Rey Pilot Hull Paint Study Final Report, May 2, 2019, Los Angeles County Department of Beaches and Harbors [note: this report summarizes the results of the first phase of the Pilot Study]

(2) Convert from Cu AFPs to lower leach rate Cu AFPs
There should be no additional cost to convert from Cu AFPs to lower leach rate Cu AFPs.

6.4. The monitoring and evaluation of water and sediments.

(1) Continue monitoring in marinas, channels and Bay waters
Routine monitoring is already being conducted by the County of Orange (County). This monitoring could be used to meet part of this task with no additional cost; however, marina sites have not previously been included in this routine monitoring. The County of Orange estimates that the monitoring required by the proposed TMDLs could increase the County's overall monitoring effort for metals on the order of 10-20%; the extent of the increase and associated costs is dependent on the specifics of monitoring program(s) that is approved by the Water Board. Cost estimates provided by a consultant to the City indicate that monitoring costs over a 5-year period would be on the order of $1.85 million. With the elimination of certain components in the proposed Basin Plan amendment (see above), this cost would be reduced by at least $758,000. In addition, costs of the water quality and sediment monitoring and data analysis/reports would be reduced since monitoring and analysis are no longer required for Zn, Hg, As and Cr. (The City's cost estimates included these metals based on the Non-TMDL Action Plans that had been proposed for these metals. The Action Plans are no longer part of these amendments.)

Marina monitoring- The evaluation of marina areas in the Bay with no or limited sediment Cu data would require additional targeted monitoring. This could be incorporated into routine monitoring of the Bay and include the same parameters that are monitored for other sites (water and sediment analyses). The number of marina sites should be chosen in proportion to the area of the Bay occupied by marinas. The sampling of additional sites (marina areas) would likely be approximately $5,000 per station. Marina owners/operators will also be required to conduct monitoring; this monitoring can and should be coordinated with routine monitoring and/or targeted marina monitoring by other parties, including Orange County and City of Newport Beach.

The dischargers are required to propose monitoring plans and to implement those plans upon approval. Cost considerations will be factored into the development and approval of these plans.

Other areas of the Bay with no or limited water/sediment data should also be investigated to determine the environmental health of these areas. Based on Board staff analyses of anticipated costs, this monitoring could likely be accomplished for approximately $200,000, but note again that the costs and timing of this monitoring and evaluation, which may affect immediate vs long-term costs, can be considered in the development and approval of the proposed monitoring plan.

It is noteworthy that such monitoring would also be necessary to assess compliance with USEPA's already established Cu TMDLs if the proposed TMDLs are not adopted.

(2) Continue monitoring and evaluation of tributary and storm drain runoff to meet Cu allocations, and evaluate local impacts near large storm drains
The monitoring of tributary and storm drain runoff is already part of the monitoring requirement for the Orange County MS4 Permit so there would be no additional cost associated with the Cu TMDLs.

The estimated cost of investigation of local impacts near large storm drains is included in the monitoring estimates provided by the City; see above. It is our understanding that in response to other TMDL requirements and implementing permits (e.g., the Orange County MS4 permit), the City is already working on diversions of some storm drains in dry weather; implementation of these diversions would obviate the need for monitoring of discharges from these drains to the Bay, at least during dry weather.

Monitoring of tributary and storm drain runoff.

The monitoring of tributary runoff (including metals) is already being conducted as part of the MS4 stormwater permit monitoring; therefore, there should be no additional costs resulting from the Cu TMDLs.

7.0 Summary of Areas of Controversy or Disagreement

Pursuant to CEQA Guidelines section 15123, the following is a summary of known areas of controversy or disagreement regarding the proposed Project. The issues raised by stakeholders and members of the public as part of the public participation process include the following:

1. The Cu TMDLs conflict with the Department of Pesticide Regulation's authority to regulate Cu AFPs under Food and Agriculture Code section 11501.1 and with actions taken by the Department of Pesticide Regulation to reduce the leach rate of Cu AFPs.

2. The data employed by Santa Ana Water Board staff are too old to provide a reliable measure of Cu water quality conditions in Newport Bay. More recent data show that (the Bay is at or close to compliance with the CTR Cu chronic criterion of 3.1 µg/L, and/or (2) that anticipated actions (e.g., the implementation of DPR's maximum Cu leach rate for AFPs and/or dredging) would be sufficient to achieve compliance with the CTR Cu criterion.

3. Use of non-Cu alternative AFPs may be more hazardous than Cu AFPs, and there are no commercially available alternatives that are safer than and perform as well as Cu AFPs.

4. The implementation schedule is not reasonable.

5. The implementation of these TMDLs should be delayed until the effects of the use of lower leach rate Cu AFPs on dissolved Cu concentrations in Newport Bay can be evaluated.

6. State agencies such as the Department of Motor Vehicles (DMV), Department of Boating and Waterways (DBW), and the State Lands Commission (SLC), should take actions to reduce Cu discharges from Cu AFPs on boats in Newport Bay (or statewide), through issuance of regulations, legislation, or the addition of new programs.

These known areas of controversy are addressed in the analysis in this SED and the Santa Ana Water Board's responses to comments in Appendix B to this SED.

8.0 Findings and Statement of Overriding Considerations

As discussed above (see, for example, XXI. MANDATORY FINDINGS OF SIGNIFICANCE**),** this SED analysis finds that the adoption and implementation of the proposed Cu TMDLs (Proposed Project) may have potentially significant effects on the environment with respect to water quality (X.a.) and biological resources (IV. a, b).

As described in the analyses of X.a. and IV.a, b, above, these potential impacts may result from the use of alternative AFPs, including non-biocide AFPs and non-Cu biocide AFPs. Use of non-biocide AFPs might allow the introduction of invasive species that could compete with native resident and migratory species in the Bay for habitat and food. Non-biocide paints may also contain ingredients (e.g., fluoropolymers or perfluorocarbons) that could adversely affect the biota directly; however, limited data are currently available concerning such potential effects of non-biocide ingredients on aquatic organisms. The use of non-Cu biocide AFPs, which contain a biocidal active ingredient such as zinc or an organic compound, could result in adverse effects on aquatic organisms. Non-Cu biocide AFPs are known biocides that are regulated by DPR and are used to reduce biofouling on boat hulls.

Mitigation measures are available to reduce these impacts. With respect to non-biocide AFPs, concerns about the introduction of invasive species could be mitigated by choosing a paint that is effective at reducing fouling because of physical characteristics (such as silicone or hard epoxy coatings). An inspection/cleaning protocol might be implemented to require that boats that have travelled to ports outside Newport Bay have their hulls cleaned before they leave their last port prior to mooring, docking, or berthing in Newport Bay. Using this strategy, the hulls should be clean when the boats return to Newport Bay, which would reduce the chance of introducing an invasive species.

With respect to non-Cu biocide AFPs, the potential direct effects on the biota as the result of ingredients that might be released from these AFPs could be reduced with mitigation measures such as the use of hull cleaning BMPs (e.g., soft cloths, container/filter system) and the application and cleaning of AFPs in accordance with labeling instructions, including the frequency of cleaning. Implementation of these mitigation measures is within the authority and jurisdiction of the parties who implement site-specific projects in the Bay to comply with the Cu TMDLs. Those agencies can and should employ these mitigation measures to reduce impacts as much as feasible (Title 14, California Code of Regulations, Section 15091(a)(2)).

In contrast to the potential impacts of the Cu TMDLs, the impairment of water quality standards in Newport Bay due to dissolved Cu is known and continues. At elevated concentrations, Cu is

toxic to aquatic organisms, including plants and animals that form the base of the food chain for other organisms, including birds. The biological beneficial uses of Newport Bay are not maintained or protected as the result of dissolved Cu impairment. Due to this continued impairment, federal law and regulation requires the development and implementation of Cu TMDLs.

The dischargers will be required to consider environmental effects and appropriate mitigation measures on a project-specific level. Where significant adverse environmental impacts cannot be reduced or eliminated, findings of overriding considerations may be considered.

The Cu TMDLs are required by law under section 303(d) of the federal Clean Water Act (CWA), and USEPA has already established TMDLs for Cu in Newport Bay[60]. As described in Section 5.0. if the Santa Ana Water Board does not adopt these revised Cu TMDLs, the Santa Ana Water Board will be required to fully implement USEPA's Cu TMDLs, which have a higher likelihood of adverse environmental impact. To the extent that the mitigation measures identified in this SED analysis are deemed infeasible by dischargers, the necessity of implementing USEPA's Cu TMDLs to remove the impairment in Upper and Lower Newport Bay (an action required to achieve the express, national policy of the Clean Water Act) remains.

Having weighed legal considerations, economic, social, and technological considerations, and the environmental benefits of the proposed Cu TMDLs against the potential, unavoidable environmental risks of implementing them, and in view of the entire record supporting the TMDLs, the environmental benefits of these proposed TMDLs outweigh the potential unavoidable adverse environmental effects, and that such potential adverse environmental effects are acceptable under the circumstances.

[60] Total Maximum Daily Loads for Toxic Pollutants, San Diego Creek and Newport Bay, California. U.S. Environmental Protection Agency, Region 9, 2002.