CITY OF

NEWPORT BEACH

Harbor Commission Staff Report

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Agenda Item No. 6.2

TO: HARBOR COMMISSION

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TITLE: Update on Copper TMDLS in Newport Harbor

ABSTRACT:

In 2022, the Santa Ana Regional Water Quality Control Board adopted a Total Maximum Daily Load (TMDL) for copper in Newport Bay to meet the U.S. Environmental Protection Agency's California Toxics Rule standard of 3.1 parts per billion (ppb) for dissolved copper. Approved by the State Water Resources Control Board in 2025, the TMDL establishes a 12-year schedule to achieve a 60% reduction in copper loading, primarily targeting leaching from copper-based antifouling paints on vessel hulls.

The City of Newport Beach has taken a proactive role in implementing TMDL requirements through water quality monitoring, public education, best management practices, and collaboration with the California Department of Pesticide Regulation and regional partners. Monitoring results indicate that copper concentrations are trending downward and, in many areas, already meet water quality objectives.

Although challenges remain—such as technical uncertainties, limited alternatives to copper-based paints, and differing regulatory perspectives on dredging benefits—the City remains on track to meet TMDL milestones through continued monitoring, outreach, and adaptive management. These efforts support the City's commitment to maintaining Newport Harbor as a clean, safe, and well-enjoyed resource.

RECOMMENDATION:

1. Determine this action is exempt from the California Environmental Quality Act (CEQA) pursuant to Sections 15060(c)(2) and 15060(c)(3) of the CEQA Guidelines because this action will not result in a physical change to the environment, directly or indirectly; and

2. Receive and file

FUNDING REQUIREMENTS:

There is no fiscal impact related to this item.

DISCUSSION:

Background

In 2002, the U.S. Environmental Protection Agency (USEPA) adopted statewide water quality limits for copper and other metals under the California Toxics Rule (CTR). Following these federal actions, the Santa Ana Regional Water Quality Control Board (Regional Board) developed a Total Maximum Daily Load (TMDL) for copper in Newport Bay, establishing limits on the amount of copper that can enter the water to protect aquatic life and meet the CTR water quality objective of 3.1 parts per billion (ppb) for dissolved copper.

The Regional Board approved a Basin Plan Amendment adopting the Copper TMDL for Newport Bay on December 2, 2022, which was subsequently reviewed and accepted by the State Water Resources Control Board in August of 2025. The amendment now serves as a binding regulatory framework guiding copper reduction efforts throughout the harbor.

The TMDL identifies leaching from copper-based antifouling paints on vessel hulls as the primary ongoing source of dissolved copper in the harbor, although other contributing sources—such as stormwater discharges, sediments, and legacy contamination—also exist.

Regulatory Requirements

The Copper TMDL requires responsible entities—including the City of Newport Beach, County of Orange, marina owners/operators, boatyards, hull cleaners, and individual boat owners — to implement actions designed to reduce copper loading to the harbor.

The TMDL establishes a 60% total copper load reduction goal over 12 years, measured from the date of U.S. EPA approval, with interim milestones as follows:

* 20% reduction after 4 years

* 40% reduction after 8 years

* 60% reduction after 12 years

The implementation plan requires each responsible party to take feasible steps to achieve reductions, including:

* Promotion of low-leach rate or alternative antifouling paints

* Implementation of environmentally responsible hull cleaning practices

* Establishment of hull cleaner certification programs

* Execution of public education and outreach programs

For municipal agencies, including the City of Newport Beach, the TMDL must also be integrated into the Municipal Separate Storm Sewer System (MS4) program and associated monitoring and reporting activities.

City Actions to Date

The City of Newport Beach has taken a proactive and collaborative approach toward compliance, including the following initiatives:

- Partnership with the California Department of Pesticide Regulation (DPR):
- Conducted harbor-wide sampling and trend analyses to assess dissolved copper concentrations.
    - In 2019, 47 sites were sampled across the harbor; only 5 exceeded 4.0 ppb, with a bay-wide average concentration of 2.6 ppb—below the regulatory threshold.
    - Follow-up sampling in 2022 confirmed similar or improved conditions.
- Public Education and Outreach:
    - Developed and distributed information to slipholders, marinas, and boaters on proper hull cleaning practices and the environmental effects of copper-based paints.
- Participation in Regional Efforts:
    - Collaborated with the Newport Bay Copper Reduction Project, Regional Water Board staff, Recreational Boaters of California (RBOC), and other harbor agencies.
- BMP Implementation:
    - Promoted voluntary hull cleaner certification and best management practices (BMPs) for in-water cleaning operations and marina maintenance activities.
- Ongoing monitoring and data collection efforts are planned through 2030 to evaluate long-term trends and the performance of DPR-approved low-leach rate paints.

Current Conditions and Challenges

Monitoring data indicate that dissolved copper concentrations in Newport Harbor are trending downward and are already near or below the TMDL numeric target in many locations. Nevertheless, several challenges remain in achieving full compliance:

- Technical Uncertainty:

  - Measuring and apportioning copper contributions from different sources—boats, sediments, and stormwater—remains complex.

- Effectiveness of Current BMPs:
  - BMPs and outreach programs implemented in other harbors (e.g., Shelter Island, Marina del Rey) have not produced measurable reductions in copper concentrations.

- Alternative Paint Limitations:
  - Widespread conversion to non-copper paints is not currently feasible due to cost, limited performance, and concerns about replacement coatings containing PFAS compounds, which pose other environmental risks.

- Dredging Considerations:
  - City staff believe dredging activities may significantly improve water quality by removing accumulated sediment-bound copper. The Regional Board considers such benefits temporary, though it has not directly participated in local field evaluations.

Despite these challenges, the City remains confident it can meet interim and long-term reduction goals through continued monitoring, coordination, and adaptive management.

Next Steps

City staff will continue working collaboratively with the Regional Board, DPR, and other stakeholders to ensure compliance and environmental progress. Key next steps include:

1. Continue Monitoring and Reporting

   Maintain bay-wide sampling every two to three years.

   Report progress and trend data to the Regional Board.

2. Expand Outreach and Incentive Programs

   Encourage voluntary use of low-leach rate antifouling paints.

   Support certified hull cleaner programs and provide guidance on environmentally sound maintenance practices.

3. Enhance BMP Implementation

   Evaluate marina management practices, including designated maintenance areas, containment systems, and pumpout compliance.

4. Coordinate Regionally

Partner with regional agencies, boating organizations, and the private sector to align communication, share data, and avoid duplicative efforts.

5. Adaptive Management

Adjust strategies as new technologies and products become available, or as monitoring results warrant more prescriptive measures.

CONCLUSION

Dissolved copper concentrations in Newport Harbor continue to improve and are approaching compliance with state and federal standards. The City's proactive efforts—especially in partnership with the Department of Pesticide Regulation—position Newport Beach favorably to achieve the required load reductions within the prescribed timeframe.

While uncertainties remain regarding the effectiveness and practicality of certain TMDL measures, the City will continue to advocate for science-based, achievable, and cost-effective solutions to maintain Newport Harbor as a clean, safe, and well-enjoyed resource for all users.

ENVIRONMENTAL REVIEW:

Staff recommends the Harbor Commission find this action is not subject to the California Environmental Quality Act (CEQA) pursuant to Sections 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment) and 15060(c)(3) (the activity is not a project as defined in Section 15378) of the CEQA Guidelines, California Code of Regulations, Title 14, Division 6, Chapter 3, because it has no potential for resulting in physical change to the environment, directly or indirectly.

NOTICING:

The agenda item has been noticed according to the Brown Act (72 hours in advance of the meeting at which the Harbor Commission considers the item).

ATTACHMENTS:

Attachment A – Copper Concentration Survey 2020