INFORMATION
February 4, 2021
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May 6, 2021

SAN DIEGO UNIFIED PORT DISTRICT

MEMORANDUM

Date: February 4, 2021

To: Board of Port Commissioners

Via: Jason H. Giffen
Vice President, Planning, Environment & Government Relations
jgiffen@portofsandiego.org

From: Karen Holman
Director, Environmental Protection
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Kelly Tait
Program Manager, Environmental Protection
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Subject: In-Water Hull Cleaning Online Survey Launch

The purpose of this memo is to notify the Board of the upcoming launch of an In-Water Hull Cleaning online survey to the boating community. Responses should allow the District, marinas, yacht clubs, hull cleaners, boaters and other stakeholders to better understand in-water hull cleaning behaviors and will help inform solutions that further improve water quality in San Diego Bay and beyond.

Background

Copper impairments in marine waters have been identified by the State Water Quality Control Board as an issue in marinas along the coast of California. The Shelter Island Yacht Basin (SIYB) has been identified as an area where high copper levels in the water exceed federal and state standards. A Total Maximum Daily Load (TMDL) adopted by the San Diego Regional Water Quality Control Board for SIYB contains a copper loading reduction schedule with a final loading reduction requirement of 76 percent from baseline levels by 2022.

The TMDL identifies the primary source of copper into SIYB water as the copper antifouling paints that are used to protect boat hulls from marine growth. One way copper can be released into the water is the underwater cleaning of boat hulls, commonly referred to as “In-Water Hull Cleaning” (IWHC). When a diver scrubs or wipes a copper-painted hull during a cleaning event, copper in the paint is released into the water and becomes a pollutant.

Subject: In-Water Hull Cleaning Online Survey Launch

Different cleaning tools, varying levels of copper in paints used, and varying cleaning frequencies are all factors that may impact how much copper is released into the water from IWHC. A better understanding of these factors should help find solutions to further improve water quality in SIYB and San Diego Bay.

In an effort to improve water quality, the District has undertaken several initiatives related to copper reduction and IWHC (Attachment A). Recent Board direction (Attachment B) prompted staff to reevaluate IWHC practices, which included reviewing the District's current IWHC Ordinance and IWHC Permit Program. Stakeholder engagement regarding IWHC practices occurred in 2019 and early 2020, and feedback from participants suggested the frequency of cleaning and types of tools used vary greatly from vessel to vessel and between divers and IWHC companies. As such, staff is seeking to improve the understanding of IWHC behaviors and how those connect with water quality.

Survey Release

Staff will be distributing an online survey to the boating community (which includes boat owners, marina and yacht club managers, and divers) to better understand current IWHC behaviors in San Diego Bay. The surveys cover topics that include hull paint usage, cleaning frequencies and IWHC tools. Answers will assist staff in improving the Copper Reduction Program and identifying solutions to further improve water quality in SIYB and San Diego Bay.

The online survey will be distributed to interested parties via e-blast and will also be accessible via hyperlink on the District's Copper Reduction Program website[1]. Surveys will be available online to the public starting next week and will be open for at least thirty days.

If you have any questions, please contact Kelly Tait at (619) 348-1690 or via email at ktait@portofsandiego.org.

Attachments:
Attachment A: June 18, 2019 BPC Agenda: Presentation and Update on Copper Load Reduction Efforts
Attachment B: October 8, 2019 BPC Agenda: Direction to Staff on IWHC

[1] The District's Copper Reduction Program website can be accessed at https://www.portofsandiego.org/environment/environmental-protection/copper-reduction-program.

San Diego Unified Port District

3165 Pacific Hwy.
San Diego, CA 92101

File #:2019-0191

DATE: June 18, 2019

SUBJECT:

PRESENTATION AND UPDATE ON THE 2018 COPPER LOAD REDUCTION EFFORTS RELATED TO THE SHELTER ISLAND YACHT BASIN TOTAL MAXIMUM DAILY LOAD AND DIRECTION TO STAFF ON FUTURE LOADING REDUCTION STRATEGIES

EXECUTIVE SUMMARY:

In 2005, the San Diego Regional Water Quality Control Board (Regional Board) set a Dissolved Copper Total Maximum Daily Load (TMDL) for the Shelter Island Yacht Basin (SIYB). The TMDL requires a 76 percent reduction of copper loading by 2022, with interim loading targets of 10 percent and 40 percent (compliance phases) by 2012 and 2017, respectively. The TMDL named the District, the City of San Diego, the SIYB marinas and yacht clubs, hull cleaners, and the recreational boaters themselves, as parties responsible for reducing their copper pollution loads. On March 11, 2011, the Regional Board issued Investigative Order No. R9-2011-0036 to the District. The Investigative Order requires that the District annually assess TMDL implementation progress and provide written compliance reports (herein referred to as Progress Reports) to document the actions taken to comply with the TMDL.

The 2018 Progress Report marked the first year of the final phase of the TMDL compliance period. Looking ahead, the final compliance phase requires a 76 percent load reduction to meet TMDL compliance by the end of 2022. 2018 vessel tracking indicates that there has been an estimated 45.2 percent (approximately 948 kg/yr) reduction in copper loading when compared with the TMDL baseline of 2100 kg/yr. Per the TMDL implementation, the continuation of the 40 percent 2017 interim compliance continues to be achieved. The load reduction for 2018 was equivalent to that reported for 2017 (approximately 45.4 percent).

Water quality testing showed the basin average to be 6.7 µg/L, an approximately 20 percent decrease from the baseline average of 8.3 µg/L. It also concluded that the basin water quality continued to remain relatively consistent, as it had over the past five years.

As in previous years, a variety of Best Management Practices (BMPs) were implemented by the District with the goal of further reducing dissolved copper loading and improving water quality. Marinas and yacht clubs also implemented BMPs during this reporting period. Examples of such BMPs include but are not limited to: ongoing education and outreach efforts, improved vessel tracking accuracy, encouraging the use of low-leach copper paints and non-copper alternatives, and pursuing alternative methods for copper reduction via the District's Blue Economy Incubator.

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During this reporting period, a new state regulation (i.e. DPR Rule) went into effect on July 1, 2018 mandating that only low-leach copper hull paints can be used on recreational vessels throughout the state of California. This new regulation fully eliminates high-copper paints from the California market by June 30, 2020. While the adopted DPR Rule will likely assist in copper reductions; there will still need to be additional BMP initiatives to fully achieve the required 76% loading reduction by 2022. Meeting the final TMDL compliance point is likely to require additional direct load reduction efforts coupled with the loading reduction expected as a result from the DPR Rule.

Board of Port Commissioner's Resolution 2009-230 memorialized the strategies for the Copper Reduction Program, aimed at removing dissolved copper in and around San Diego Bay. Resolution 2009-230 (Attachment A) details developing, as necessary, policies, ordinances, procedures and/or programs to achieve load reductions. Staff will be discussing and will seek Board direction on additional policy options that would support further direct loading reductions given that results from the 2018 Annual Report support a need for such strategies in order to achieve 2022 TMDL compliance.

While evaluating options, staff will continue to conduct outreach and engage with individual marinas and yacht clubs, as well as other TMDL parties, to better understand the direct load reduction commitments that all TMDL parties will be initiating to assist in achieving 2022 TMDL compliance.

RECOMMENDATION:

Receive presentation from staff regarding results of the Shelter Island Yacht Basin TMDL and efforts to reduce copper in the bay and grant approval for staff to further evaluate additional policy strategies to support direct loading reductions of dissolved copper in SIYB.

FISCAL IMPACT:

This item is for presentation purposes only and has no fiscal impact.

COMPASS STRATEGIC GOALS:

This agenda item supports the District's strategic goals by seeking copper reductions throughout San Diego Bay and working to improve water quality, with an emphasis on SIYB.

This agenda item supports the following Strategic Goal(s).

- A Port that the public understands and trusts.
- A Port with a healthy and sustainable bay and its environment.

DISCUSSION:

Regulatory Background

In 1996, high concentrations of copper in the water of SIYB prompted the Regional Board to add SIYB to the state's Clean Water Act Section 303(d) List of Water Quality Limited Segments. The Regional Board found that copper concentrations in SIYB ranged from three to eight micrograms per

liter (µg/L), thereby exceeding the water quality objective of 3.1 µg/L.

In 2005, the Regional Board set a TMDL[1] for the basin, requiring a 76 percent reduction of copper loading by 2022, with interim compliance phases requiring loading reduction targets of 10 percent and 40 percent by 2012 and 2017, respectively. The TMDL names the District, the City of San Diego, the SIYB marinas and yacht clubs, hull cleaners and the recreational boaters themselves as parties responsible for reducing copper pollution loads. Passive leaching of copper from boat hulls and in-water hull cleaning were identified as sources of copper in SIYB.

In 2009, the Board of Port Commissioner's Resolution 2009-230 was passed. This resolution memorialized the strategies for the Copper Reduction Program, aimed at removing dissolved copper in and around San Diego Bay. As part of its Copper Reduction Program, the Port has initiated, and is in the process of planning and implementing, several BMPs and other actions to reduce discharges of dissolved copper into harbors and marinas within SIYB, throughout San Diego Bay, and statewide.

In March 2011, the Regional Board issued Investigative Order No. R9-2011-0036 to the District. This Investigative Order outlines the SIYB TMDL annual reporting requirements and requires the development of monitoring and BMP implementation plans to guide activities over the course of the TMDL. The Investigative Order also requires that the District annually assess TMDL implementation progress and provide a written Progress Report to document the actions taken to comply with the TMDL.

As a result, staff has been implementing a multi-faceted Copper Reduction Program to achieve the TMDL's load reductions and reduce copper throughout the Bay. The Copper Reduction Program focuses on the largest source contributions and identifies a strategic approach to effectively achieve regulatory compliance, while balancing economic and public interests. It is comprised of five elements, as follows:

1. Testing and Research
2. Hull Paint Transition
3. Education and Outreach
4. Policy Development / Legislation
5. Monitoring and Data Assessment

Staff is currently working on several key projects and tasks to execute the multiple elements of the Copper Reduction Program. These efforts are summarized annually in the aforementioned Progress Reports. This Board update is intended to discuss the 2018 TMDL findings, the latest Copper Reduction Program efforts, and seek Board approval to further evaluate potential policy options that could increase direct loading reductions given that results from the 2018 Progress Report support a need for additional strategies in order to continue progress towards achieving the 2022 TMDL final compliance requirement.

SIYB TMDL - 2018 Findings

The 2018 Progress Report discusses BMP implementation in SIYB and San Diego Bay and provides information on vessel conversions along with water quality and toxicity monitoring results

(Attachment B). Several activities were implemented during 2018, including education and outreach, coordination with state agencies, and continued efforts with permitting and inspecting in-water hull cleaning activities. The District also continued to attempt to work collaboratively with the marinas and yacht clubs to track vessels and report on hull paint use within the basin.

Copper Load Estimates

The annual copper loading reduction for 2018 was 45.2 percent. This reduction continued to achieve the required 2017 interim compliance phase requirement of 40 percent. Loading remained similar to loads reported in the 2017 Progress Report (estimated 45.4 percent reduction in copper loading). In order to continue progress towards 2022 TMDL compliance, a continued downward trend in loading needs to be observed in subsequent Progress Reports.

Annual dissolved copper loading reduction was assessed by tracking conversions of hull paints from copper to non-copper, DPR Category I (low leach paints), or low-copper (i.e., less than 40 percent copper) products, and aged copper paints on vessels moored in SIYB and comparing the current loading of 948 kg/yr to the SIYB TMDL-assumed baseline loading of 2,100 kg/yr.

This year marks the fourth year that the 40% loading reduction target was met. As such, the program, with continued implementation, remains in interim compliance. Success in meeting interim loading targets thus far can be attributed to the continued efforts in areas such as vessel tracking, voluntary hull paint transitions to low copper or non-copper paints and BMP implementations. Additionally, staff and stakeholders continue to tighten the tracking of vessels, which has revealed an increase in boaters choosing Category 1, low-leach copper paints. The number of boaters using Category 1 paints is expected to increase in the coming years as the full realization of the DPR Rule will take time. However, it is important to recognize that additional direct loading measures, in concert with the full realization of the DPR Rule, will be needed to meet final TMDL compliance requirements.

Water Quality- Dissolved Copper Concentrations

Results from the 2018 monitoring event showed that the average dissolved copper level in the basin's surface waters was 6.7 microgram(s) per liter (µg/L). This was approximately 20 percent lower than the baseline average (8.3 µg/L). The result is also similar to basin-wide averages observed during the previous four monitoring events (2017 [7.9 µg/L], 2016 [7.1 µg/L], 2015 [6.9 µg/L], and 2014 [7.0 µg/L]). Consistent with results from previous years, five of the six SIYB sampling stations exceeded the California Toxics Rule (CTR) criterion continuous concentrations (CCC) water quality objective of 3.1 µg/L. The same five of the six stations had also exceeded the CTR acute criterion maximum concentration (CMC) WQO of 4.8 µg/L.

Water Quality- Toxicity

The 2018 water quality monitoring found that one station (SIYB-1, the station
farthest inside the basin) had statistically significant effects on developing mussel larvae. This finding is consistent with results of previous TMDL monitoring results. Acute toxicity was observed in the topsmelt survival test in one station, located mid-basin (SIYB-4). While this is the first time that acute toxicity has been observed since implementation of the TMDL program, the result was not likely to be related to dissolved copper concentrations, but instead potentially increased algae presence or another temporary factor present resulted in the observed acute toxicity.

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2018 Copper Reduction Program Efforts
2018 marked the first year of the final compliance phase, in which a significant focus was placed on education and outreach efforts to reengage stakeholders and interested parties on the TMDL requirements, the Port's BMP implementation approach, information about the new DPR Rule, and the importance of further reducing copper loading in SIYB to reach final compliance requirements. Two new engagement efforts (discussed below) were completed as a result.

"One-on-One" Meetings
Given the start of the final compliance phase and the full realization of the DPR Rule, re-engaging stakeholders on the TMDL has been a Port staff priority. In July 2018, Port staff reached out to the 11 marina and yacht club tenants that are co-listed as Responsible Parties on the TMDL to schedule one-on-one meetings. These meetings were intended to personalize collaborative relationships among marina managers, yacht club managers, and Port staff. The Port had three goals associated with the meetings:

1. Clearly identify TMDL requirements and discuss tenant copper reduction efforts for the final compliance phase, recognizing that copper reduction at each facility may not be a "one size fits all" approach;

2. Encourage managers to continue with submitting complete vessel tracking records and offer Port assistance in areas with remaining deficiencies; and

3. Discuss the new DPR regulation as it relates specifically to the SIYB TMDL compliance requirement.

The one-on-one meetings gave managers the opportunity to share with Port staff their ideas and challenges faced related to copper reduction and the TMDL. Such feedback will help inform Copper Reduction Program efforts and strategies for this final compliance phase.

Copper Paint Roundtable
In 2018, Port staff facilitated a roundtable discussion with Ms. Aniela Burant from the DPR as the keynote speaker to help clarify remaining questions that stakeholders directly affected by the new DPR regulation (mainly boatyards and paint manufacturers) may have. The Port also organized this visit with the DPR to further develop the working relationship between the two agencies, because collaboration and communication are critical for achieving Copper Reduction Program and TMDL goals.

The meeting was held at Driscoll Boat Works on Shelter Island and was attended by 27 individuals from the DPR, the Port, and both the boatyard and paint manufacturing stakeholder community. Boatyard representatives and Port staff also brainstormed ways to improve the process in which recreational boaters receive information from the boatyards regarding their hull paint products.

In addition to focused education and outreach, progress was made across all focused areas of the Copper Reduction Program, highlighted herein:

Policies and Regulation: A variety of separate initiatives were completed, including

hosting a visit with the DPR to discuss relevant policy issues across the state, holding a workshop for interested stakeholders regarding the new copper paint regulation (see below), and continuing in-water hull cleaning regulations.

Testing and Research: Two pilot projects are currently under agreement within the Port's Blue Economy Incubator that may assist with copper remediation.

Implementation and Facilitation of Hull Paint Transitions: All Port vessels continue to be painted with non-copper hull paints.

Boater Education and Outreach: Stakeholders affected by the SIYB were provided information via outreach efforts such as TMDL status updates to stakeholder groups, regular meetings with the marinas and yacht clubs (see below), information dissemination through print material and digital efforts, conference presentations, newspaper articles, and other outreach initiatives;

Companion Programs: Construction site inspections, commercial business inspections, and Standard Urban Stormwater Mitigation Plan (SUSMP) implementation continued.

Monitoring and Reporting: A special study of dissolved copper concentrations over tidal cycles in SIYB was completed. In addition, field sampling for the 2018 Regional Harbor Monitoring Program (RHMP) was completed in several marinas including SIYB.

New Regulations from DPR

On July 1, 2018, the new DPR Rule (3 California Code of Regulations [CCR] section 6190) went into effect to set a maximum leach rate for copper antifouling paints. Under the new regulation, paint manufacturers are no longer allowed to import or sell paints in the state of California with leach rates greater than 9.5 µg/cm2/day. While this new point-of-sale regulation will assist in reaching TMDL requirements, the DPR has cautioned that additional mitigation measures may be necessary. Current stock can be sold until June 30, 2020. This regulation is the result of joint efforts by the Port and state legislators with the passing of Assembly Bill (AB) 425, requiring the DPR to adopt a leach rate protective of aquatic environments. This milestone reflects the efforts that are part of the Copper Reduction Program's strategic approach to encourage statewide changes for copper paint use.

A future loading scenario using the 2018 vessel tracking data (presented in the Progress Report) estimates that the DPR Rule could potentially achieve a 60 percent load reduction in SIYB.

Summary

The 2018 load reduction results continued to meet the interim load reduction requirement. The vessel tracking data indicate an increase in the number of vessels with low-leach copper paints; however, a decrease in the total number of vessels coated with non-copper paints (or other non-copper alternatives) was also observed. To date, vessel tracking and BMP efforts by the District, marinas and yacht clubs have been successful in achieving interim compliance requirements, and additional load reductions are expected as a result of the full realization of the DPR Rule. In addition, vessel tracking response rates have continually improved, increasing the accuracy of the vessel tracking data over time.

Average dissolved copper concentrations throughout the basin have remained consistent over the past five monitoring events. Chronic toxicity continues to be restricted to stations in the head of the basin. Dissolved copper concentrations in the surface water have remained relatively constant for the five most recent monitoring events (2014-2018). Additional direct load reductions should result in the continued improvement of water quality.

Continuing Actions
Looking ahead, it is likely that additional load reductions will be needed to achieve the final TMDL compliance requirement. Non-copper transitions, implementation of additional BMPs at SIYB facilities, and other alternative mechanisms that result in the direct reduction of copper loading will be necessary. Efforts should focus on closing the gap between the DPR Rule's estimated maximum 60 percent copper load reduction into SIYB and the TMDL compliance requirement of a 76 percent load reduction by 2022, primarily emphasizing actions that directly decrease copper loading from passive leaching and in-water hull cleaning. Between the full realization of the DPR Rule and the identification and implementation of additional efforts, full TMDL compliance by the end of 2022 may be achieved.

At this time, staff requests Board direction to further evaluate additional copper load reduction strategies in line with Board of Port Commissioner's Resolution 2009-230. Policy options may include strategies that address direct copper load reductions and those that support the attainment of water quality standards, including, but not limited to: in-water hull cleaning, BMPs and paint use.

While evaluating options, staff will continue to conduct outreach and engage with individual marinas and yacht clubs, as well as boatyards and in-water hull cleaners to better understand the direct load reduction commitments that all TMDL parties can undertake to move towards 2022. Staff will also continue to review District initiatives currently in place and identify areas needing additional evaluation.

General Counsel's Comments:

The General Counsel's Office has reviewed the agenda sheet and attachments, as presented to it, and approves them as to form and legality.

Environmental Review:

This presentation and update to the Board does not constitute an "approval" or a "project" under the definitions set forth in California Environmental Quality Act (CEQA) Guidelines Sections 15352 and 15378 because no direct or indirect changes to the physical environment would occur. CEQA requires that the District adequately assess the environmental impacts of projects and reasonably foreseeable activities that may result from projects prior to the approval of the same. Any project developed as a result of Board's direction that requires the District or the Board's approval, including without limitation District proposed legislation or a request for funding will be analyzed in accordance with CEQA prior to such approval. CEQA review may result in the District, in its sole and absolute discretion, requiring implementation of mitigation measures, adopting an alternative, including without limitation, a "no project alternative" or adopting a Statement of Overrising Consideration, if required. The current Board item in no way limits the exercise of this discretion. Therefore, no further CEQA review is required.

In addition, this Board item complies with Section 87 of the Port Act, which allows for the establishment, improvement, and conduct of a harbor, and for the construction, reconstruction, repair, maintenance, and operations of wharves, docks, piers, slips, quays, and all other works, buildings, facilities, utilities, structures, and appliances incidental, necessary, or convenient, for the promotion and accommodation of commerce and navigation. The Port Act was enacted by the California Legislature and is consistent with the Public Trust Doctrine. Consequently, the proposed project is consistent with the Public Trust Doctrine.

Finally, this Board item does not allow for "development," as defined in Section 30106 of the California Coastal Act, or "new development," pursuant to Section 1.a. of the District's Coastal Development Permit (CDP) Regulations because it will not result in, without limitation, a physical change, change in use or increase the intensity of uses. Therefore, issuance of a Coastal Development Permit or exclusion is not required. However, the District's projects require processing under the District's CDP Regulations. If a project is formulated as a result of Board's direction, the Board will consider approval of the project and any improvements associated after the appropriate documentation under District's CDP Regulations has been completed and authorized by the Board, if necessary. The Board's direction in no way limits the exercise of the District's discretion under the District's CDP Regulations.

Equal Opportunity Program:

Not applicable.

PREPARED BY: Kelly Tait
Senior Environmental Specialist, Environmental Protection

Attachment(s):

Attachment A: Resolution 2009-230 San Diego Unified Port District's Commitment to Take Actions to Reduce Copper Concentrations in San Diego Bay
Attachment B: Executive Summary of the 2018 Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load Monitoring and Progress Report

[1] SIYB TMDL Technical Report, 2005
http://www.waterboards.ca.gov/sandiego/water_issues/programs/watershed/docs/swu/shelter_island/techrpt020905.pdf

San Diego Unified Port District

3165 Pacific Hwy.
San Diego, CA 92101

File #:2019-0341

DATE: October 8, 2019

SUBJECT:

PRESENTATION AND DIRECTION TO STAFF ON IN-WATER HULL CLEANING POLICY APPROACHES:

A) INFORMATIONAL UPDATE ON IN-WATER HULL CLEANING BENCHMARKING AND CONCEPTUAL MODEL UPDATE;
B) REVIEW OF PORT DISTRICT REGULATION OF IN-WATER HULL CLEANING; AND
C) ADDITIONAL VESSEL POLLUTION MATTERS

EXECUTIVE SUMMARY:

At the June 2019 Board of Port Commissioners Meeting, District staff presented updates on the Shelter Island Yacht Basin (SIYB) Total Maximum Daily Load (TMDL) and the Copper Reduction Program. During that presentation, staff discussed the need for additional copper reduction policies that would support copper load reduction efforts to meet 2022 TMDL compliance and achieve California water quality standards. Staff recommended exploring policy approaches related to In-Water Hull Cleaning (IWHC). The Board of Port Commissioners supported that recommendation and directed staff to evaluate policy options related to in-water hull cleaning.

Since the June 2019 BPC meeting, staff has conducted further research on the status of regulatory and scientific matters related to the SIYB TMDL and in-water hull cleaning, met with a number of stakeholders, attained general consensus on the best available science, and received early input on copper reduction strategies that can improve water quality.

A Conceptual Model update using the best available science was completed in September 2019. This technical evaluation found that while the TMDL's copper loading reduction compliance targets are consistent with the best available science, the TMDL's projected load contribution from in-water hull cleaning may be underestimated due in part to the manner in which the active and passive loading components are assessed.

Staff also initiated a process to include the public in review of the District's current in-water hull cleaning regulations. This review includes, reviewing the current In-Water Hull Cleaning Permits and associated Best Management Practices (BMP) requirements, and potential enhancements to District Ordinance 2681, *Unified Port District Code Section 4.14 Regulation of In-Water Hull Cleaning*.

The presentation accompanying this Board agenda item, will further discuss the aforementioned elements and provide options for approaches to further the District's copper reduction efforts, TMDL

compliance and other potential vessel-related pollution matters that have been brought to staff's attention over the course of the year.

RECOMMENDATION:

Receive presentation from staff regarding In-Water Hull Cleaning-related policy options to support direct load reductions of dissolved copper into SIYB and the attainment of water quality standards; and provide direction to staff on further policy development.

FISCAL IMPACT:

This item is for presentation purposes only and has no fiscal impact.

COMPASS STRATEGIC GOALS:

This agenda item supports the District's strategic goals by seeking copper reductions throughout San Diego Bay and working to improve water quality, with an emphasis on SIYB.

This agenda item supports the following Strategic Goal(s).

- A Port that the public understands and trusts.
- A Port with a healthy and sustainable bay and its environment.

DISCUSSION:

Regulatory Background

In 2005, the San Diego Regional Water Quality Control Board (Regional Board) adopted a Dissolved Copper TMDL for SIYB as a result of impaired water quality. The TMDL requires a 76 percent reduction of copper loading into SIYB by 2022. The TMDL named the District, the City of San Diego, the SIYB marinas and yacht clubs, hull cleaners, and the recreational boaters themselves, as parties responsible for reducing their copper pollution loads.

June 2019 Board of Port Commissioner Meeting Summary

At the June 2019 Board of Port Commissioner Meeting, District staff presented updates on the SIYB TMDL and the Copper Reduction Program. Results from the 2018 Annual Monitoring Event were shared, where vessel tracking indicated that there has been an estimated 45.2 percent (approximately 948 kg/yr) reduction in copper loading and water quality testing showed the basin average to be 6.7 µg/L (California Water Quality Standards are set at 3.1 µg/L). Staff addressed the need for additional copper reduction policies to increase load reductions and make improvements in water quality, in line with Board of Port Commissioner's Resolution 2009-230, to meet the 2022 TMDL final loading compliance target and most importantly achieve water quality standards. Staff proposed that future policy approaches should be focused on In-Water Hull Cleaning (IWHC). The Board of Port Commissioners directed staff to evaluate potential policy options to reduce copper loads into SIYB and return at a future Board meeting.

File #:2019-0341

A) Informational Update on In-Water Hull Cleaning Benchmarking and Conceptual Model Update

Since the June 2019 Board of Port Commissioner (BPC) Meeting, staff has used a methodical and stepped approach to evaluate potential policy options. This approach included outreach to interested parties, benchmarking regulatory progress in similar copper matters, reviewing the best available science, reviewing current District policy, and evaluating policy development options that could best support water quality improvements and TMDL requirements.

Benchmarking

Benchmarking allowed District staff to better understand the TMDL concerns of interested parties and learn about progress on regulatory and/or policy matters related to copper in similar programs around the state and country. Many of the current TMDL concerns shared with staff by the marina and yacht club managers were shared in May 2019 during a Best Management Practice (BMP) workshop and summarized by staff at the June 2019 BPC meeting. These concerns were echoed in follow-up meetings this summer, and correlate with the District's intent to reduce loading from in-water hull cleaning and improve water quality in SIYB and throughout the bay's marina basins.

Over the past several months, staff met with interested parties, those mentioned above as well as boaters, In-Water Hull Cleaners and members of the general public, to hear current opinions on the TMDL and discuss potential policy options that support further direct load reductions, improving water quality and meeting TMDL requirements. Staff also held conference calls and attended workshops to stay informed on the current status and approaches of other copper TMDL programs (namely Marina Del Rey and Newport), and received an up-to-date status of copper-related regulations currently in place in Washington. Benchmarking activities that occurred throughout the Summer 2019 are summarized in Attachment A.

Conceptual Model Updates

Concurrent with benchmarking activities, District staff also began working to further evaluate and compare the latest scientific copper loading assumptions to the TMDL's loading assumptions. This TMDL Conceptual Model Review effort was initiated to address concerns raised by District staff and interested parties regarding the overall contribution of copper into the water from in-water hull cleaning practices (Attachment B). Also of note, was the finding that during the District's recent water quality study for the Boatwash (a Blue Economy Incubator project), diver-based in-water hull cleaning during a single cleaning event was demonstrated to increase copper levels in the water 5-10 times greater than the 3.1 µg/L California Water Quality Standard for dissolved copper (Attachment C).

Based upon general consensus amongst District staff, the Shelter Island Master Leaseholders, and the SDPTA it was determined that a report entitled, *"Life Cycle Contributions of Copper from Vessel Painting and Maintenance Activities"* (Earley et al. [2013]) serves as the best available science to date. This study was conducted for the Department of Pesticide Regulation and evaluated leach rates resulting from both the act of in-water hull cleaning and its residual effects following the active cleaning of the hull (i.e. the lifecycle of a paint).

The TMDL Conceptual Model Review includes a comparative analyses of the 2005 TMDL conceptual model and best available science life-cycle conceptual model (Earley et al. 2013) for copper loading contribution calculations from antifouling paint leaching and in-water hull cleaning activities. Key findings suggest adaptive management measures to review vessel hull cleaning frequency and practices may lead to copper load reductions and water quality improvements to meet SIYB TMDL requirements.

The Conceptual Model Update confirmed that the total annual per-vessel dissolved copper load used in the TMDL and Earley et al. (2013) are similar. However, the individual load assumptions attributed to in-water hull cleaning differ considerably between the TMDL and Earley et al. (2013) studies. The TDML conceptual model utilizes assumptions of instantaneous and static copper release closely correlated in time with hull cleaning events, while the more recent technical analyses (Earley et al. 2013) indicate a volatile timeframe of increased and dynamic copper release in the 30 days following hull cleaning events. This finding suggests that copper release rates following periodic hull cleaning events may provide greater than a 5% relative contribution to annual loading over an estimated three -year paint life cycle.

Thus, given the findings, it is likely that reductions to in-water hull cleaning frequencies will have a greater load reduction effect than what is currently projected using the TMDL assumption, and is likely to improve water quality as well. This finding emphasizes the importance of changes in hull cleaning practices as a key strategy to achieve the required load reduction needed to meet the SIYB dissolved copper TMDL final compliance target.

Staff plans to present these findings to the San Diego Regional Water Quality Control Board later this year and discuss the potential for making administrative changes to the TMDL's Conceptual Model, which in turn would update loading calculations on an annual basis. Staff plans on including interested parties in these discussions.

B) Review of Port District Regulation of In-Water Hull Cleaning

In early September staff began a process to include the public in a review of the District's in-water hull cleaning policies and practices (Attachment D). As part of this process, staff has met with several SIYB marinas and yacht clubs who expressed interest in working with the District to make improvements and modifications to the current IWHC policies and practices.

The current review includes reviewing the current In-Water Hull Cleaning Permits and associated Best Management Practices (BMP) requirements. District staff are evaluating potential enhancements to District Ordinance 2681, Unified Port District Code Section 4.14 *Regulation of In-Water Hull Cleaning*, and may recommend revisions for the Board's review in the coming months.

Key themes in this review process include:

- Permit Issuance Processes;
- BMP Requirements;
- Tracking associated with any new requirements; and
- Enforcement

The above information was presented during a series of public engagement workshops being held October 2-3, 2019. Interested parties were informed and invited to attend via email notifications and postings on the District's website. Given the abbreviated time between those meetings and the publication of this agenda, the findings are not discussed herein, but will be discussed during staff's presentation for this agenda item.

C) Additional Vessel Pollution Matters

Addressing Vessel Pollution

Over the past year, the District has received notices of potential illegal releases of wastewater or sewage from recreational and commercial vessels at the anchorages, moorings and marinas within San Diego Bay. Complaints have also been received regarding the maintenance of vessels at berth in sportfishing landings and in marinas that have the potential to release pollutants to San Diego Bay, which is strictly prohibited under existing law. District staff has met with the Port Tenants Association, marina managers, and private individuals to accept complaints and receive information on several occasions and has conducted several investigations. Enforcement, including the issuance of citations and fines, has occurred when sources have been identified. However, source identification has been challenging since the discharges are not often observed linked to a source and wind and tidal action quickly move discharges throughout the bay. Vessel sewage-related concerns were also recently raised during the public comment period of the Port Master Plan Update item at the September Board of Commissioners meeting. This information was further discussed in a recent memo dated September 19, 2019 (Attachment E).

Vessel Pollution Approaches

Illicit vessel discharges can be a threat to the recreational, aesthetic and overall health of the bay. Though already prohibited by existing laws and regulations, including the Port Code, these discharges may be prevented through additional outreach and programmatic strategies, and enforcement.

It remains unclear why reports of potential illicit vessel discharges have grown more frequent of the past several months. Staff is evaluating the most effective and efficient mechanism with which to address the copper reduction efforts and other vessel pollution matters. During the Board presentation, staff will be discussing in more detail the approaches outlined below, as well as providing a draft schedule for a timely role out of policy updates.

1) Updates to the In-Water Hull Cleaning Ordinance

As stated above, staff is currently evaluating updates to the District's In-Water Hull Cleaning Ordinance. Updates being considered include the alignment of District BMPs with mitigation measures identified by the Department of Pesticide Regulation. These include limiting cleaning to a one-time per month cleaning frequency and the requirement to use only soft carpet as the cleaning material. Staff is also evaluating the current permit and BMP plan approach, as well as updates to tracking and enforcement processes.

Similar to the District's current in-water hull cleaning ordinance, any updates would be implemented baywide and would include provisions that in-water hull cleaners, marinas and yacht clubs, and boat owners must follow. Outreach has already been occurring to the target audiences: boaters, marinas/yacht clubs, in-water hull cleaners, boatyards, and the boating community at large; and feedback has been obtained from other regulatory agencies and TMDL-affected municipalities.

Staff will be taking the input received during these outreach efforts and from the Board into consideration, and is prepared to present a draft updated ordinance to the Board and the public in short time.

2) Comprehensive Vessel Pollution Approach

District staff is also exploring a more holistic approach to vessel pollution rather than trying to tackle each issue separately. Such an approach to vessel pollution prevention may be an effective strategy to continuously improve the overall water quality around San Diego Bay. This concept could include potential modifications to the District's programmatic pollution prevention tools such as the use of dye tablets in holding tanks to improve source identification and by placing further restrictions on the types of activities that may be occurring outside of boatyards. Please note that of the 35 marinas in San Diego Bay, 23 are members of the voluntary Clean Marine Program[1], meaning that most of the marinas are already familiar with and should be implementing and imposing upon their members strict vessel discharge requirements. While staff has received some public input on the issues and suggestions for how to resolve various reported vessel discharge issues, additional engagement and evaluation are needed.

Next Steps:
Staff will be discussing both policy concepts during the Board meeting and will be providing a conceptual timeline that outlines the most effective manner in which these concepts can move forward. Staff will be seeking Board direction and concurrence on the approach and will be prepared to bring policy updates back to the Board within the year.

General Counsel's Comments:

The Office of the General Counsel reviewed this agenda as presented to it as to form and legality.

Environmental Review:

The proposed Board item, including without limitation, a presentation and direction to staff on in-water hull cleaning policy approaches, does not constitute an "approval" or a "project" under the definitions set forth in California Environmental Quality Act (CEQA) Guidelines Sections 15352 and 15378 because no direct or indirect changes to the physical environment would occur. CEQA requires that the District adequately assess the environmental impacts of projects and reasonably foreseeable activities that may result from projects prior to the approval of the same. Any project developed as a result of Board's direction that requires the District or the Board's discretionary approval resulting in a physical change to the environment will be analyzed in accordance with CEQA prior to such approval. CEQA review may result in the District, in its sole and absolute discretion, requiring implementation of mitigation measures, adopting an alternative, including without limitation, a "no project alternative" or adopting a Statement of Overriding Consideration, if required. The current Board item in no way limits the exercise of this discretion. Therefore, no further CEQA review

is required.

In addition, this Board item complies with Section 87 of the Port Act, which allows for the construction, reconstruction, repair, maintenance, and operation of public buildings, public assembly and meeting places, convention centers, parks, playgrounds, bathhouses and bathing facilities, recreation and fishing piers, public recreation facilities, including, but not limited to, public golf courses, and for all works, buildings, facilities, utilities, structures, and appliances incidental, necessary, or convenient for the promotion and accommodation of any of those uses. The Port Act was enacted by the California Legislature and is consistent with the Public Trust Doctrine. Consequently, the proposed project is consistent with the Public Trust Doctrine.

This Board item does not allow for "development," as defined in Section 30106 of the California Coastal Act, or "new development," pursuant to Section 1.a. of the District's Coastal Development Permit (CDP) Regulations because they will not result in, without limitation, a physical change, change in use or increase the intensity of uses. Therefore, issuance of a Coastal Development Permit or exclusion is not required. However, development within the District requires processing under the District's CDP Regulations. Future development, as defined in Section 30106 of the Coastal Act, will remain subject to its own independent review pursuant to the District's certified CDP Regulations, PMP, and Chapters 3 and 8 of the Coastal Act. The prospective Board's action in no way limits the exercise of the District's discretion under the District's CDP Regulations. Therefore, issuance of a CDP or exclusion is not required at this time.

Equal Opportunity Program:

Not applicable

PREPARED BY:

Kelly Tait
Program Manager, Environmental Protection

Attachment(s):
Attachment A: Benchmarking Activities Table
Attachment B: TMDL Conceptual Model Review
Attachment C: Board Memo: Boatwash Report Published
Attachment D: Board Memo: Notification of Administrative Review
Attachment E: Board Memo: Notification of Vessel Pollution Complaints

[1] The Clean Marine Program is a voluntary partnership of private marina owners, government marina operators, boatyards and yacht clubs. The Clean Marine Program was developed to ensure clean facilities exist in the boating communities and protect waterways from pollution. More information, a list of currently certified facilities, and membership requirements can be found at: <https://cleanmarina.org/index.html>.

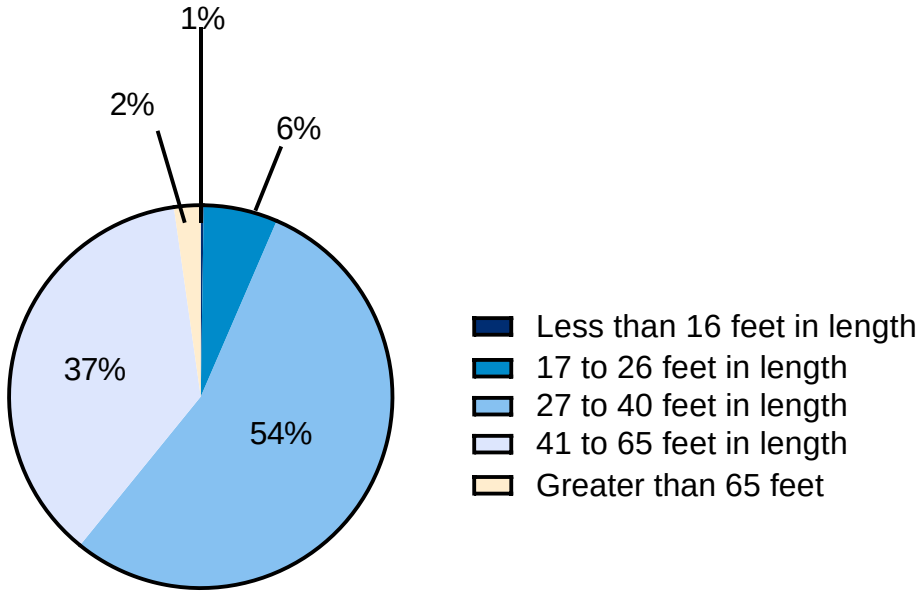
PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results- Boaters

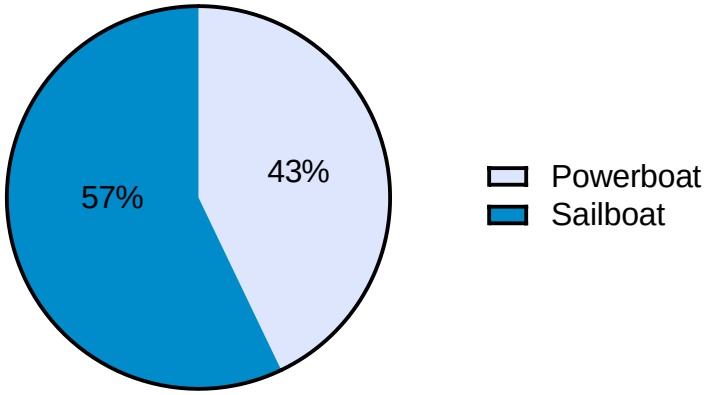
1) What is the length of your vessel?

Length of Vessels Owned By Respondents



2) Is your vessel:

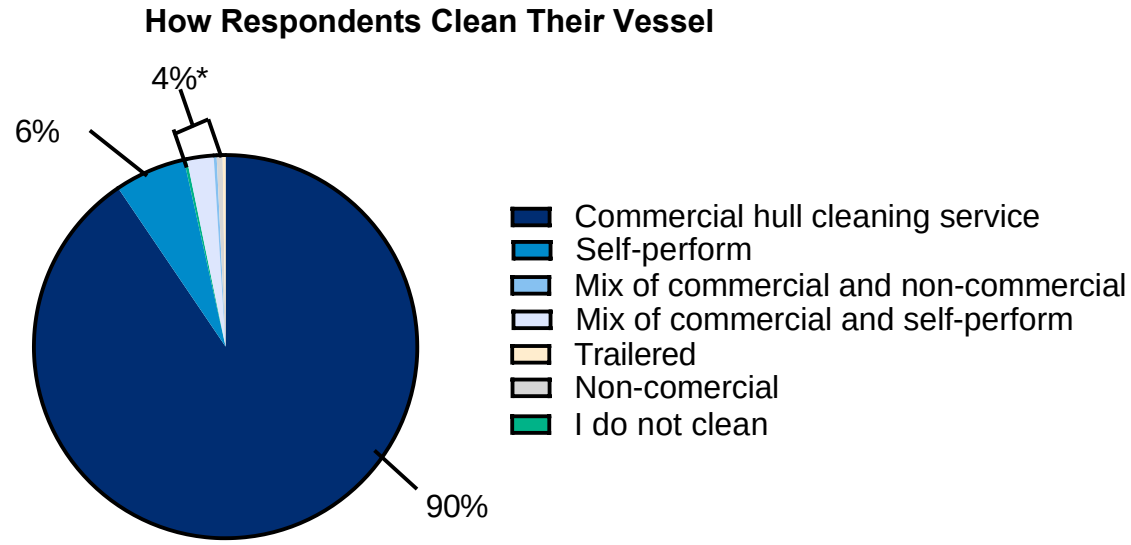
Type of Vessel Owned By Respondents



PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

3) By what means do you clean your vessel?



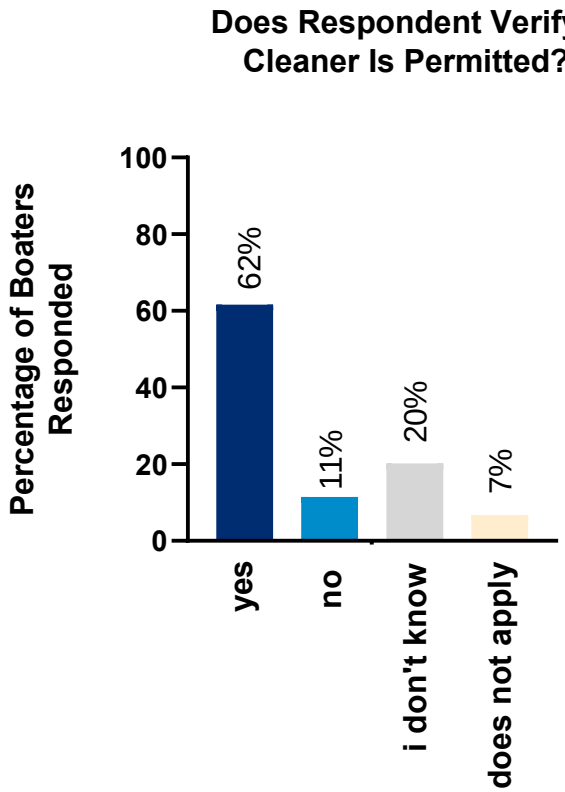
** When combined, all categories aside of commercial and self-perform comprise a total of 4%*

PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results- Boaters

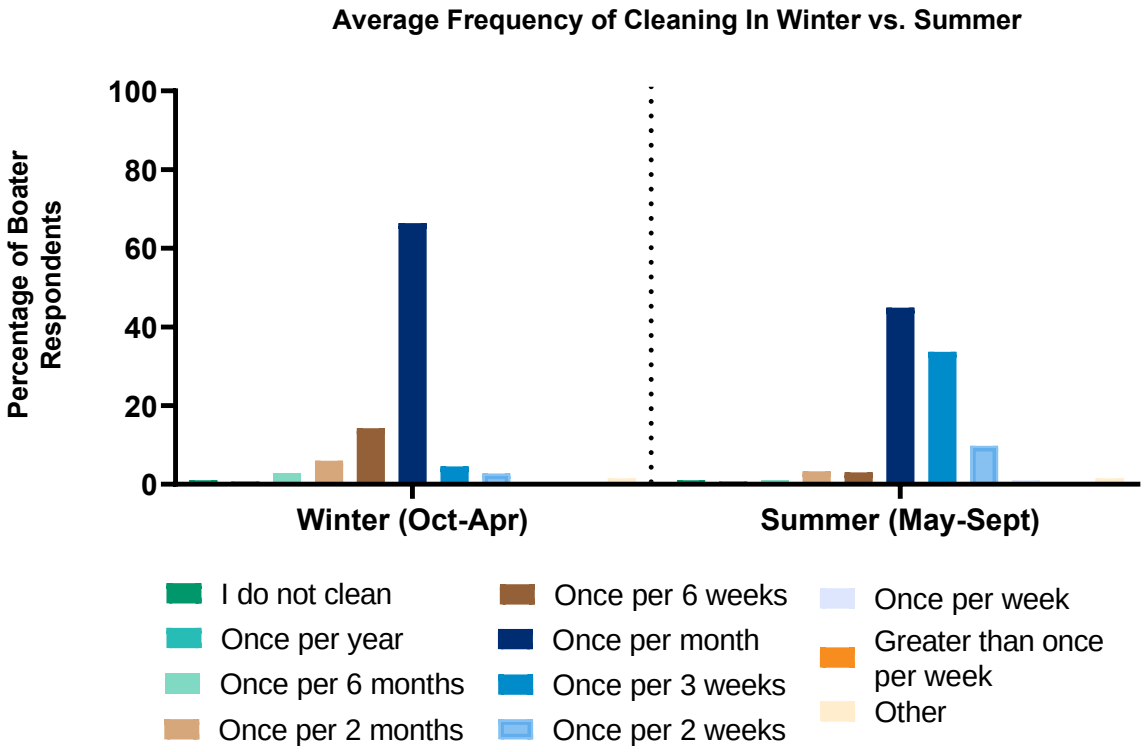
4) If you use a commercial in-water hull cleaning service in San Diego Bay, have you verified that the company providing the service is permitted by the Port of San Diego?



PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

5) In the winter months (Oct.-Apr.) and summer months (May-Sept.), what is the average frequency in which you clean your hull?

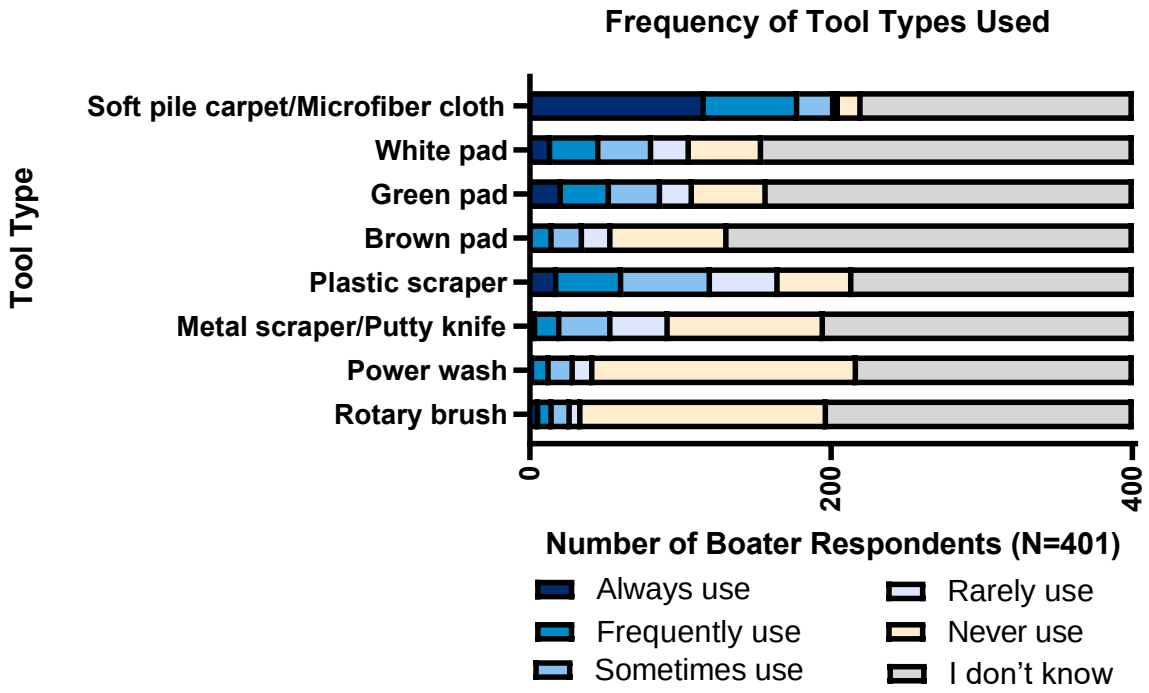


6) Combined with Question 5. See above.

PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

7) How is your boat hull being cleaned? Please rank the following cleaning tools used from the most commonly used to the least commonly used.

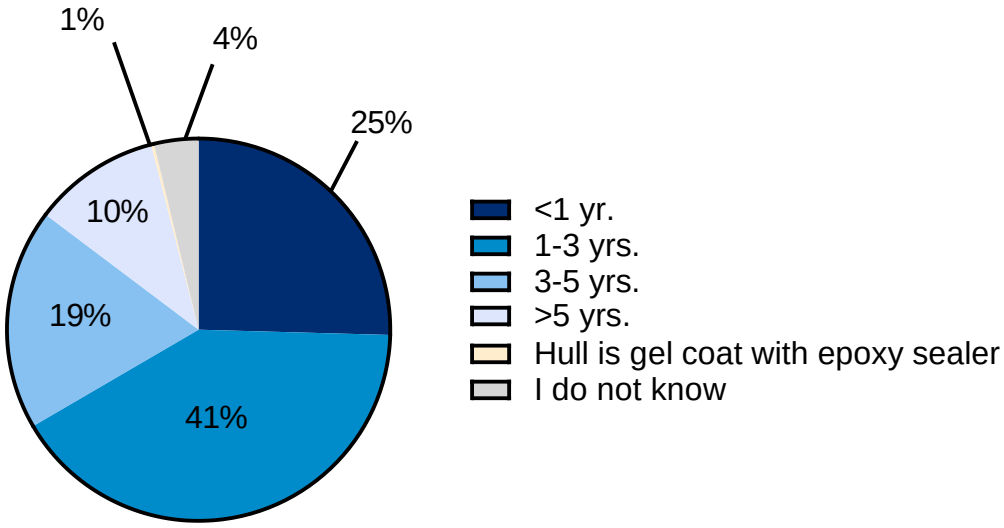


PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

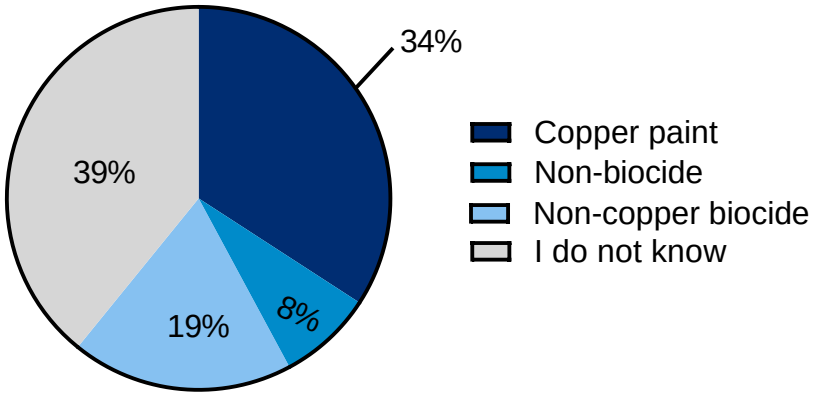
8) What is the age of hull paint on your vessel?

Age of Paint on Respondent's Vessels



9) What type of hull paint is currently painted on your vessel?

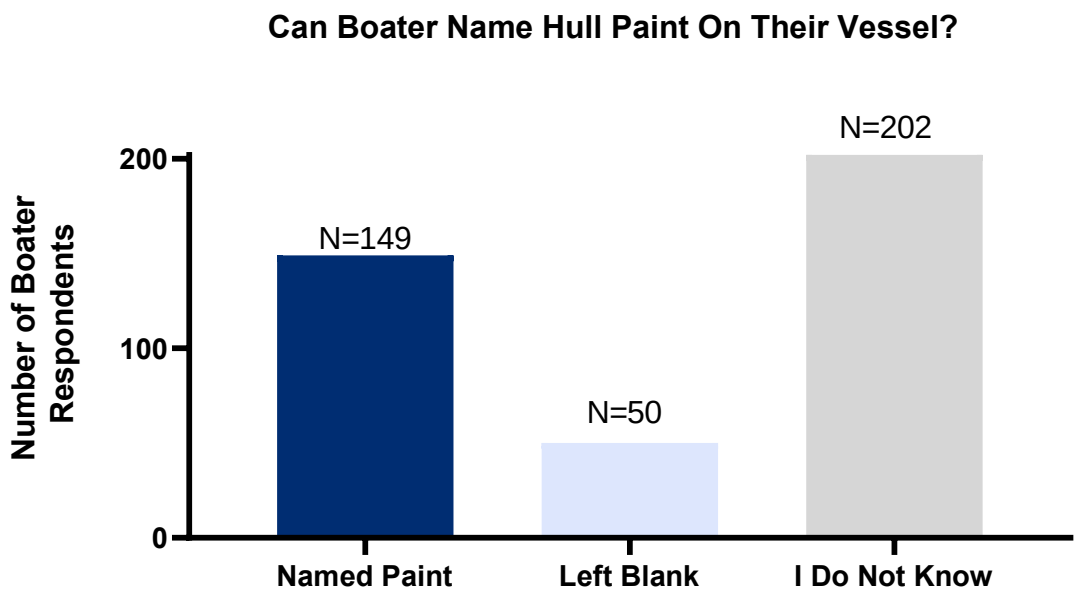
Type of Paint on Respondent's Vessels



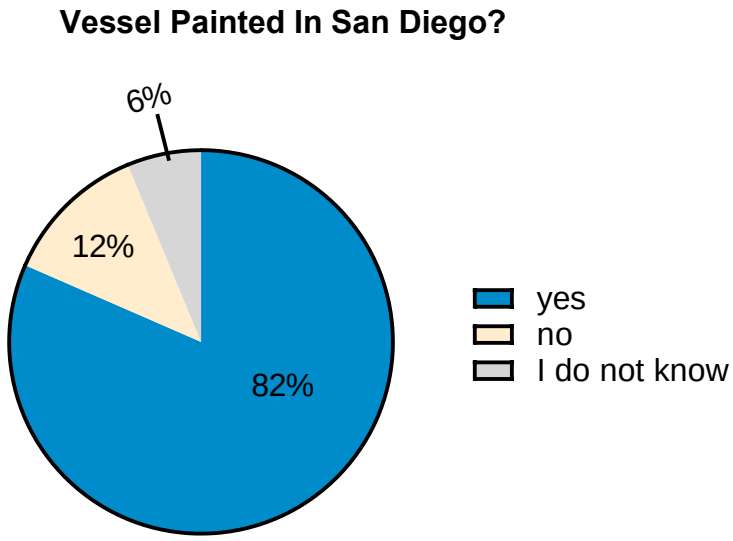
PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

10) What is the name of the hull paint are you currently using?



11) Was your vessel painted locally in the San Diego region?



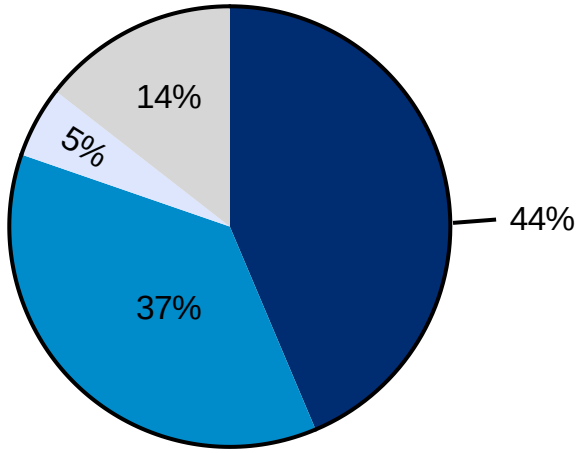
PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

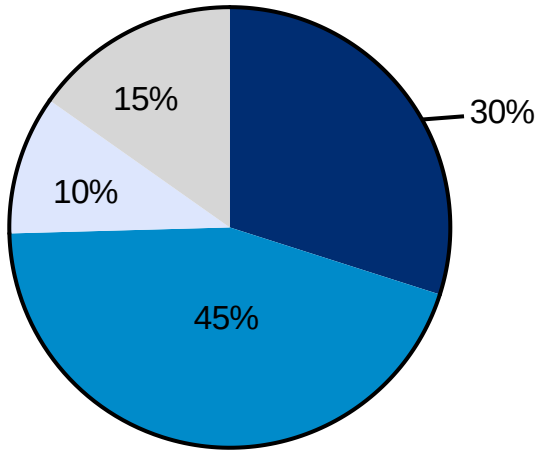
12) What is the estimated time it takes to clean your hull during the winter (Oct.-Apr.)? Summer (May-Sept.)?

Length of Time to Clean Vessel

Winter



Summer



> 30 min.
30-59 min.
1-2 hrs.
I don't know

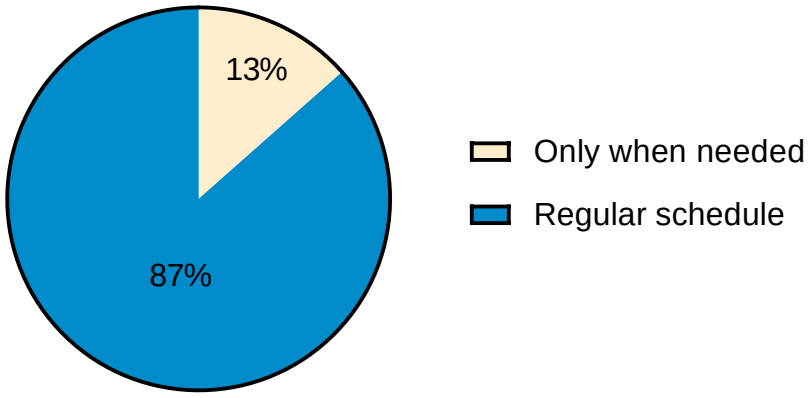
PORT of SAN DIEGO

Copper Reduction Program
In-Water Hull Cleaning Survey Results- Boaters

13) Combined with Question 12. See above.

14) Do you clean your boat on a regular schedule or only when needed?

How Are Cleanings Scheduled?



15) If only when needed, from your perspective how long after a hull cleaning event does fouling indicate cleaning is necessary? (fill in the blank)

Due to the nature of the answers, unable to graphically represent

16) If regularly scheduled, how frequently do you schedule cleanings? (fill in the blank)

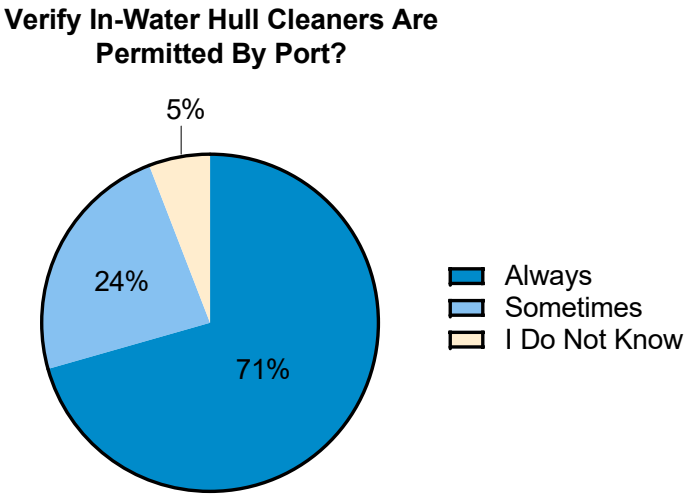
Due to the nature of the answers, unable to graphically represent.

PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Marinas & Yacht Clubs

1) If your marina/yacht club is in San Diego Bay, does your facility verify that in-water hull cleaners doing work in your facility are permitted by the Port of San Diego?

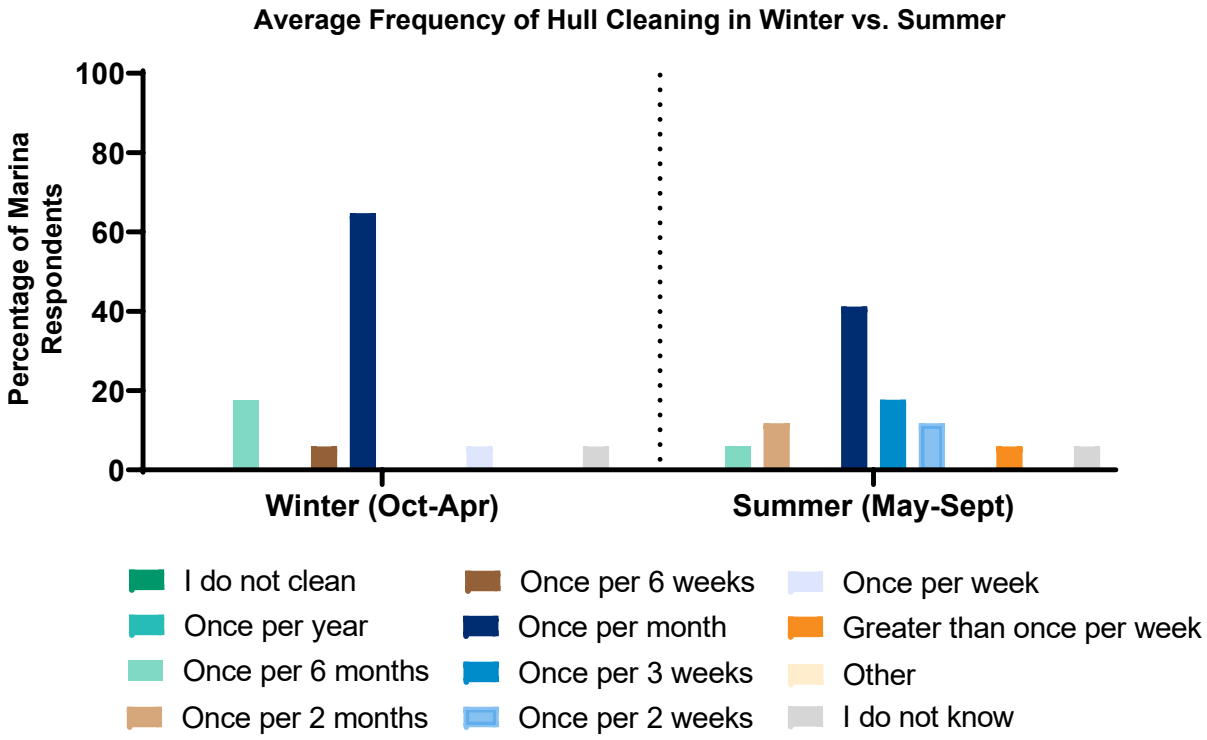


PORT of SAN DIEGO

Copper Reduction Program

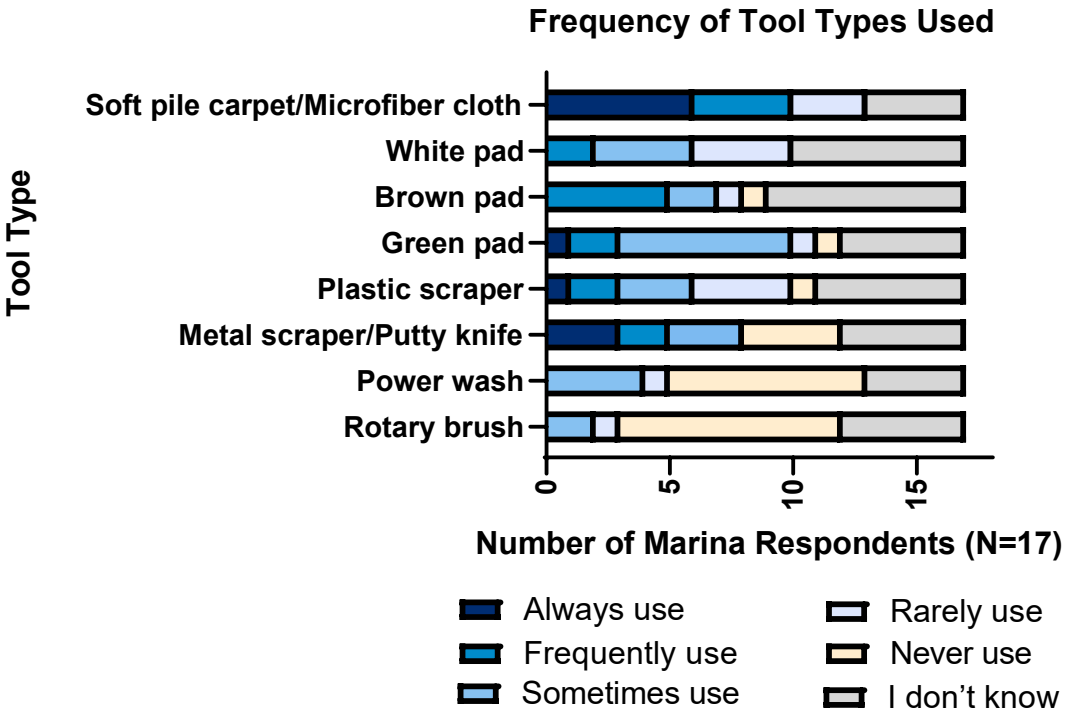
In-Water Hull Cleaning Survey Results – Marinas & Yacht Clubs

2) In the winter months (Oct.-Apr.) and summer months (May-Sept.), what is the average frequency of hull cleaning for the vessels in your marina/yacht club?



3) Answers combined with Question 2. See above.

4) Please rank the following cleaning tools used to clean vessel hulls by in-water hull cleaners at your marina/yacht club in order from most commonly used to least commonly used.

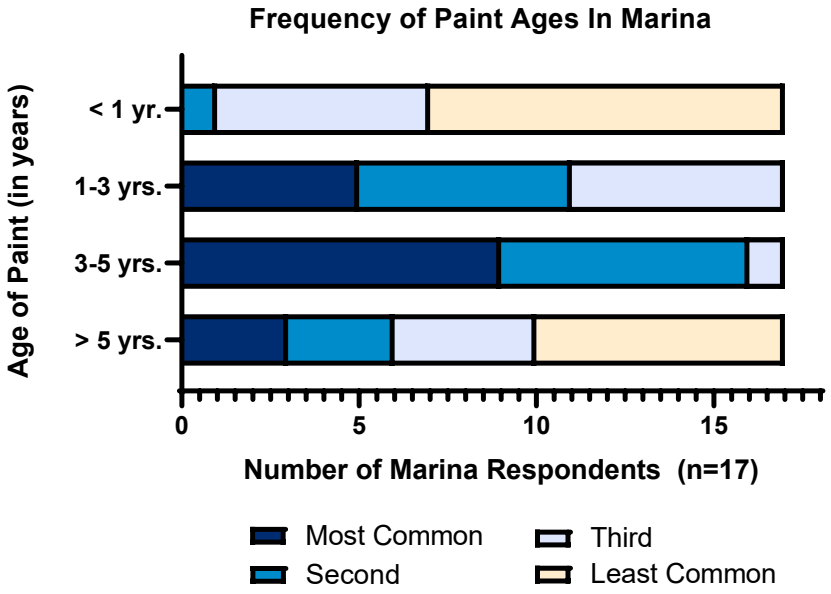


5) Please rank the following paint age categories from the most common average paint age to least common average paint age of vessels in your marina/yacht club.

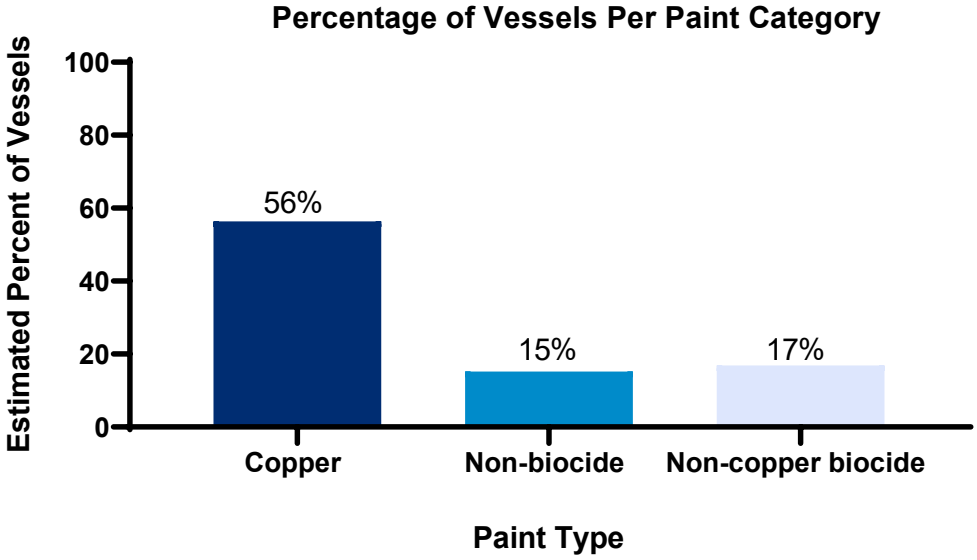
PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Marinas & Yacht Clubs



6) For each paint category, fill in the percentage of vessels with each hull paint type at your marina/yacht club.

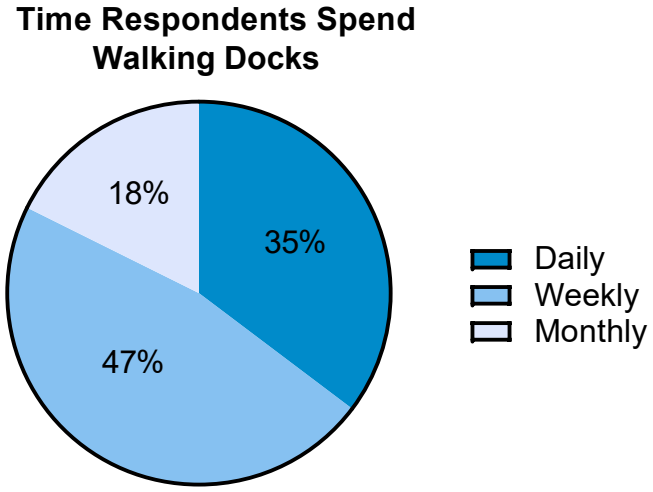


PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Marinas & Yacht Clubs

7) How often do you walk your docks to observe in-water hull cleaning at your facility?

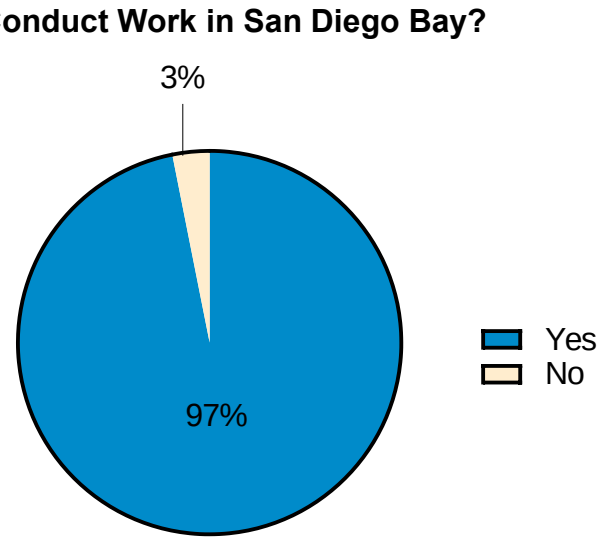


Attachment D

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners

1) Do you and/or the company you work for conduct in-water hull cleaning within San Diego Bay?

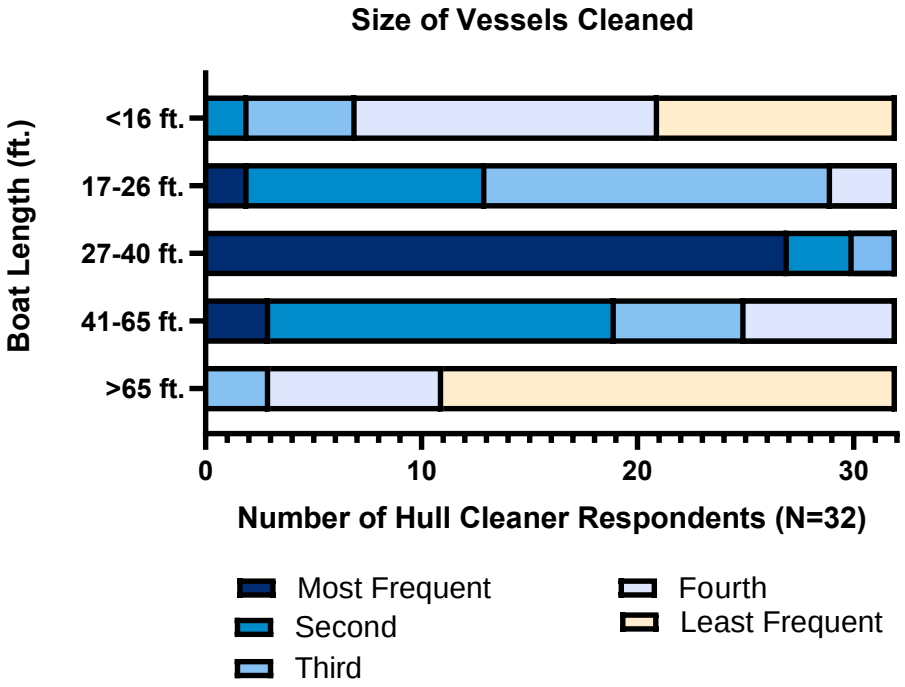


2) Please rank the following vessel length categories from the most frequent length category of vessels cleaned to least frequent length category of vessels cleaned by you:

PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners



3) In the winter months (Oct.-Apr.) and summer months (May-Sept.), what is the average frequency of hull cleaning for the vessels you service?

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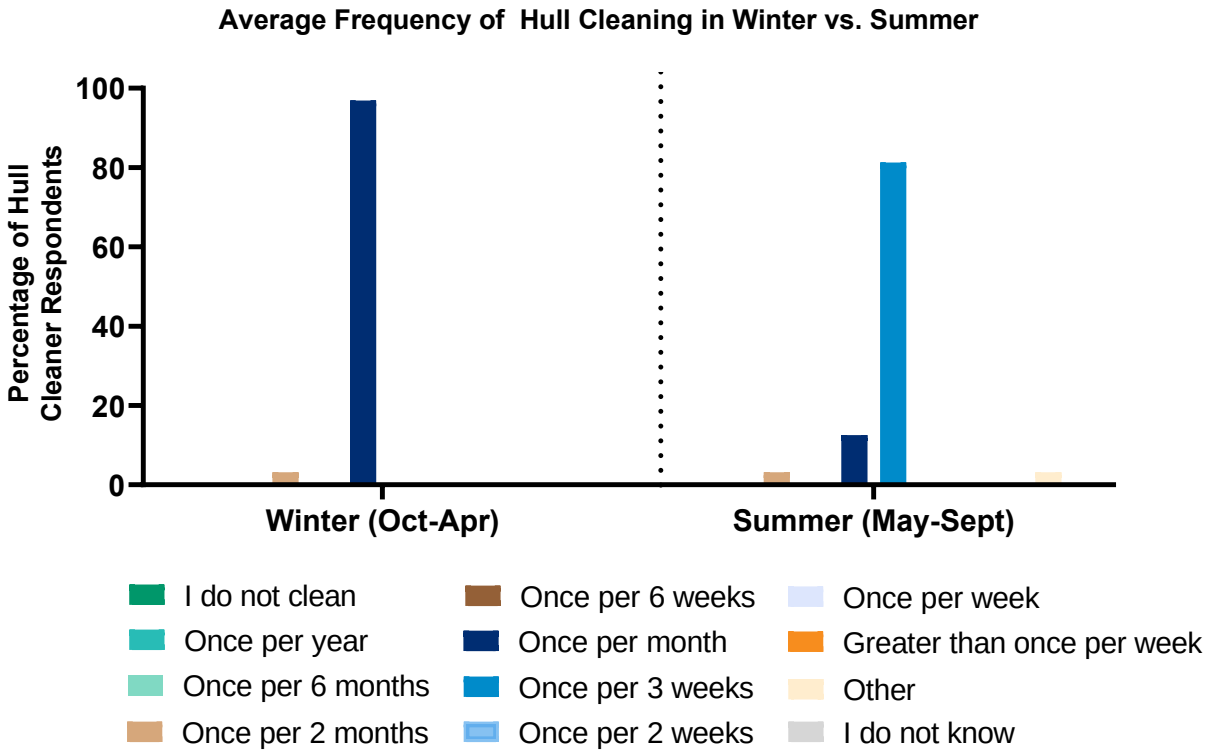
Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners



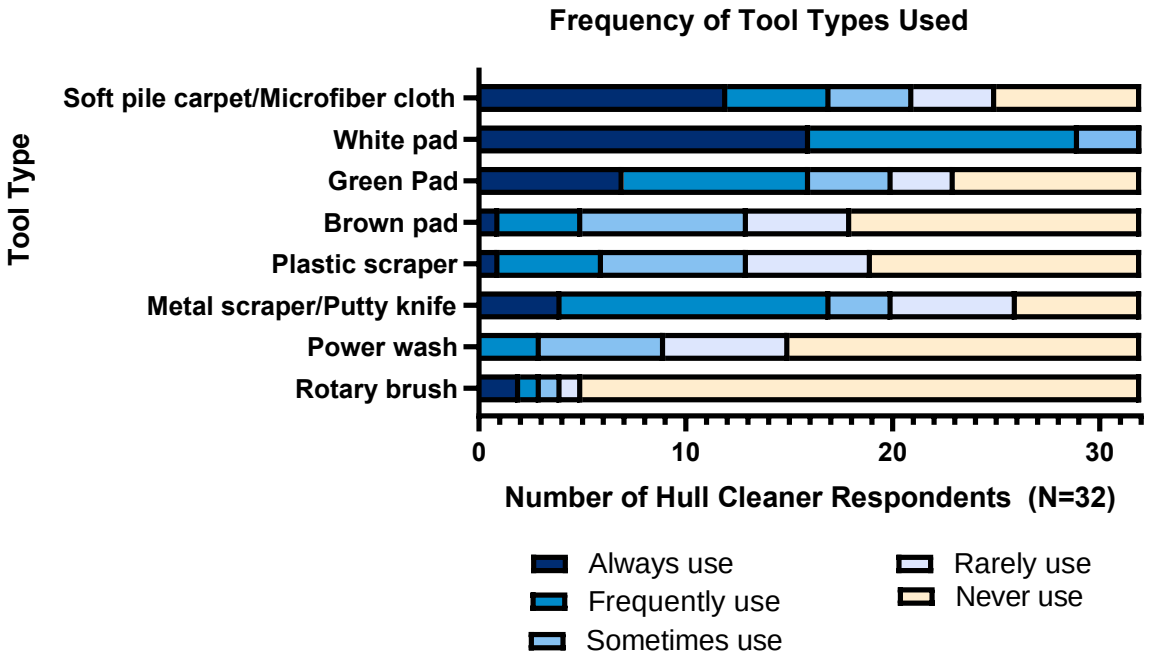
4) Combined with Question 3, see above.

PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners

5) Please rank the following hull cleaning tools from the most commonly used to the least commonly used by you.



6) Please rank the following paint age categories from the paint age you most frequently clean to the paint age you least frequently clean.

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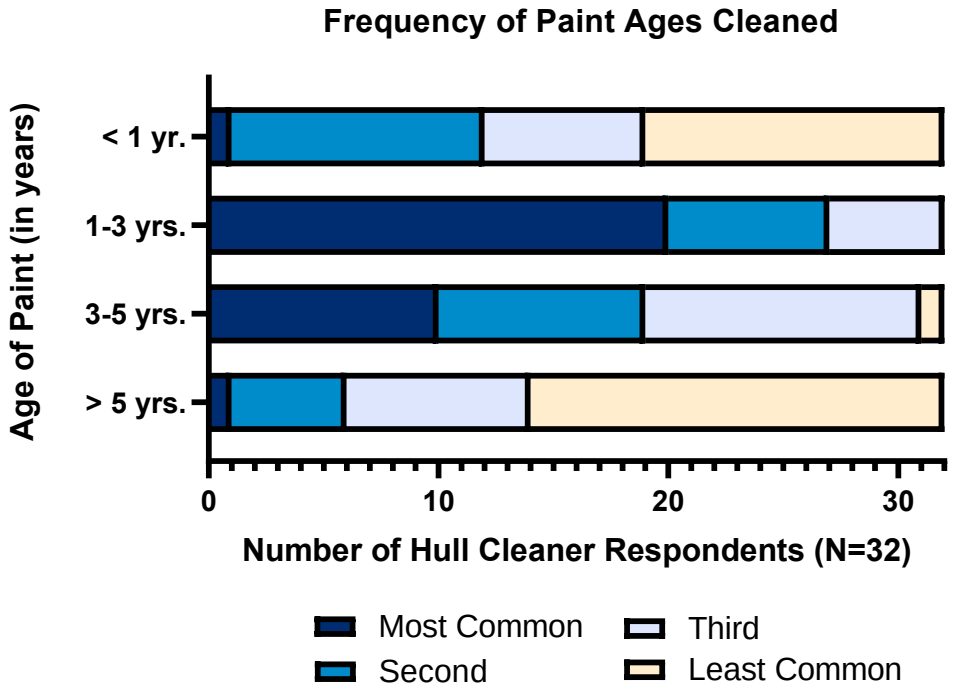
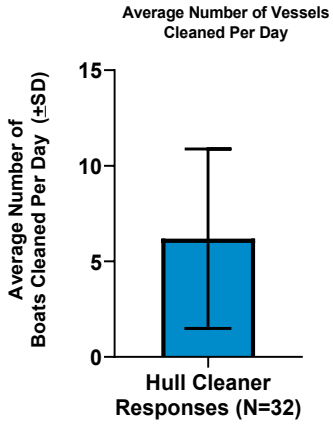
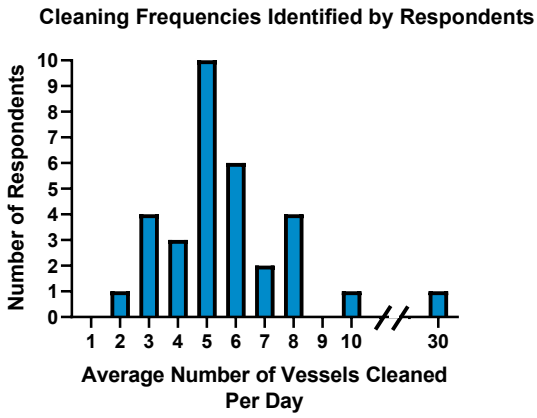
Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners



7) On average, how many boats do you clean per day?





8) Fill in the percentage of boats that you clean daily that fall into each of the following paint categories:

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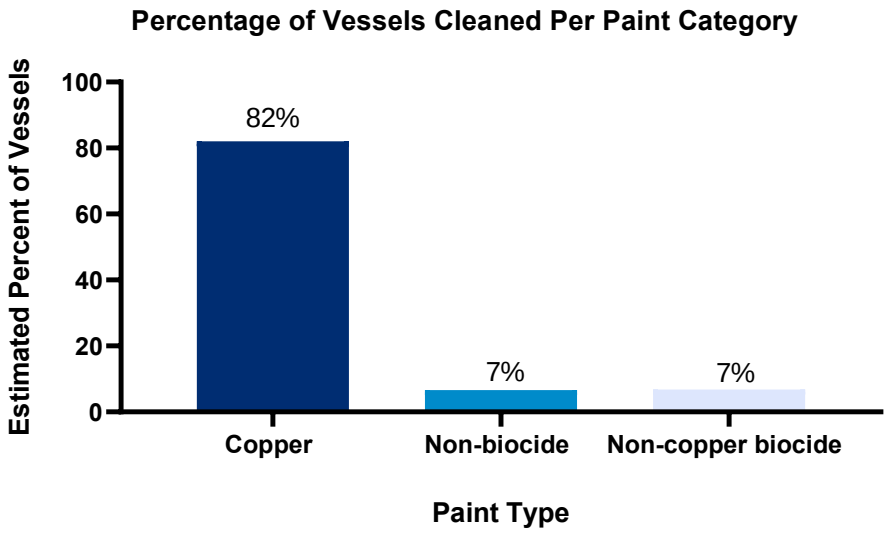
Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners

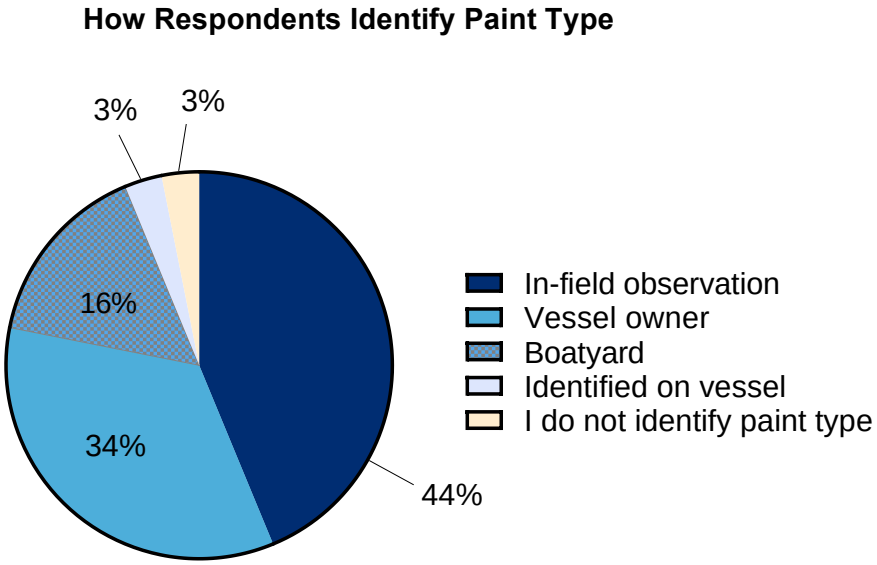


PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners

9) What method do you use to verify paint type?

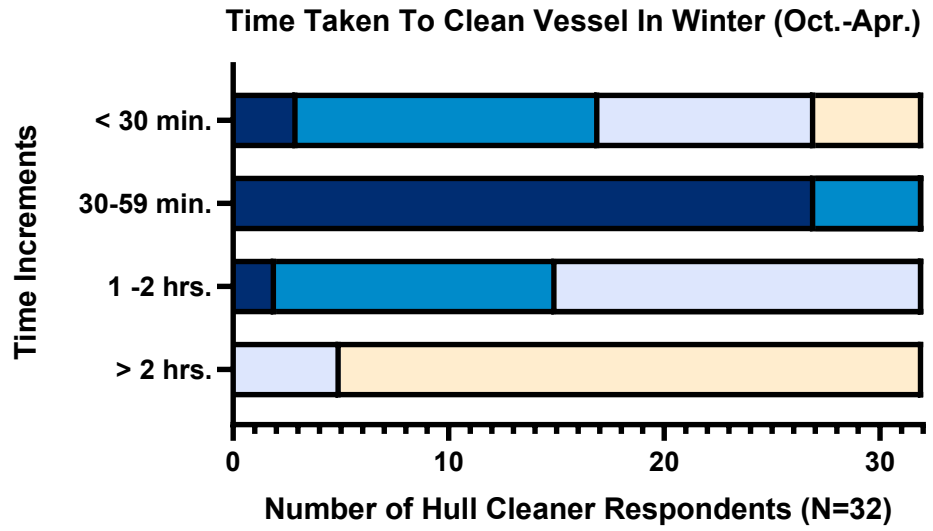


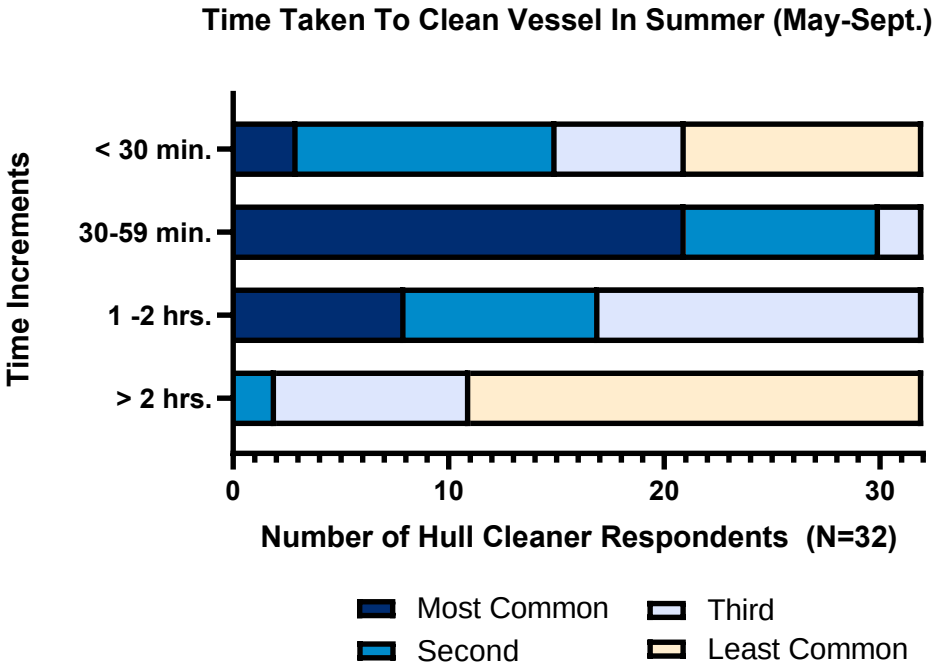
PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners

10) Please rank the following time spans representing the average amount of time it takes to clean one vessel hull during the winter (Oct.-Apr.)? Summer (May-Sept.)?





PORT of SAN DIEGO

Copper Reduction Program

In-Water Hull Cleaning Survey Results – Hull Cleaners

11) Combined with Question 10, see above.

12) Do you clean individual vessels on a set schedule or because fouling indicates so?