

Agenda Item 2021-0128

Update on the 2020 Copper Load Reduction Efforts Related to the Shelter Island Yacht Basin Total Maximum Daily Load

June 15, 2021



**PORT of
SAN DIEGO**
Waterfront of Opportunity

Karen Holman | Director, Environmental Protection
Kelly Tait | Program Manager, Environmental Protection

Agenda 2021-0128

Presentation and Direction to Staff

- A. Informational Update on the Status of the Program, Including Water Quality Results, Load Reduction Efforts and Coordination with the San Diego Regional Water Quality Control Board on TMDL Implementation Actions
- B. Direction to Staff on Initiating an In-Water Hull Cleaning Pilot Study That Would Require a Temporary Pause of In-Water Hull Cleaning of Vessels With Copper-Based Paint in Shelter Island Yacht Basin for an Eight-Week Period Starting Approximately Mid-December 2021 and Continuing Through Mid-February 2022
- C. Direction To Staff on Determining a Voluntary or Mandated Implementation Approach for an In-Water Hull Cleaning Pilot Study

TMDL Compliance

- Water in Shelter Island exceeds 3.1 µg/L state regulatory standard
- Per TMDL Copper Antifouling Paint is primary source via
 - Passive leaching: TMDL estimate accounts for 95% of copper load
 - In-Water Hull Cleaning: TMDL estimate accounts for 5% of copper load
- Track conversion of vessels from copper to non-copper paints

TMDL Stage	Compliance Year	Required Load Reduction (%)	Required Load (kg/yr)	Actual Load Reduction (%)
1	2007	0%	2,163	Baseline
2	2012	10%	1,900	17.6% ✓
3	2017	40%	1,300	45.4% ✓
3	2020	40%	1,300	48.0% ✓
4	2022	76%	567	--

Copper Reduction Program

**Policy Development/
Legislation**

Testing & Research

Hull Paint Transition

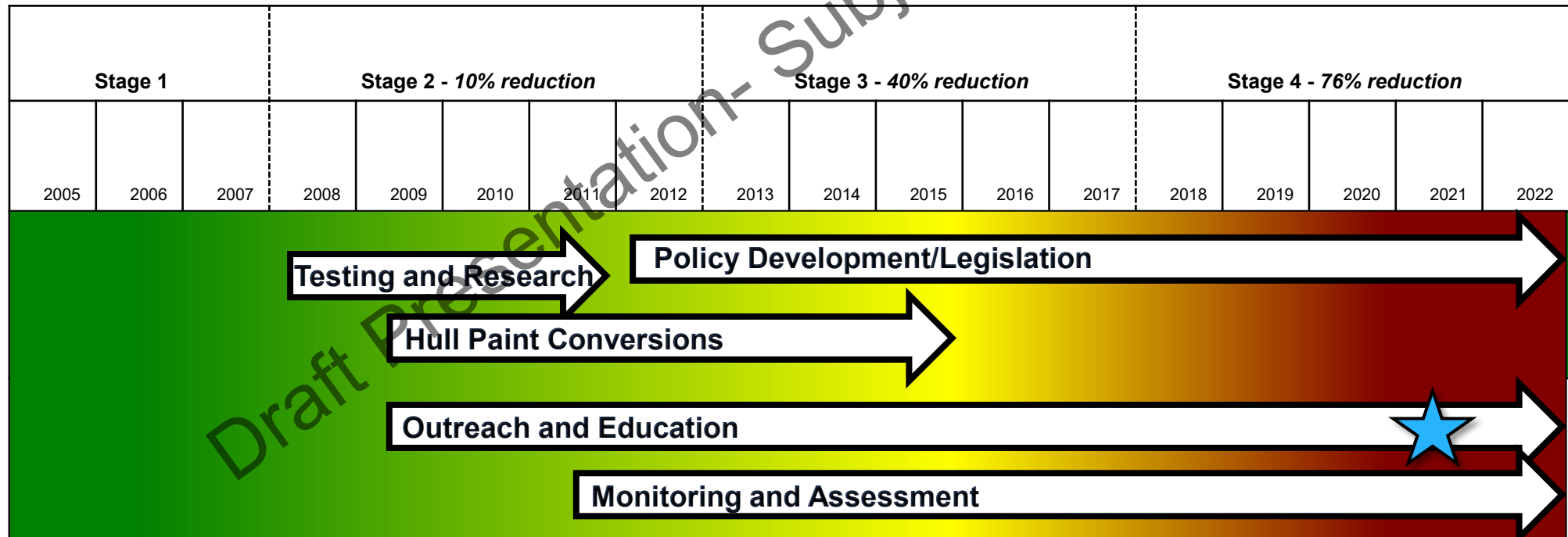
Education & Outreach

**Monitoring &
Data Assessment**

Draft Presentation- Subject to Change

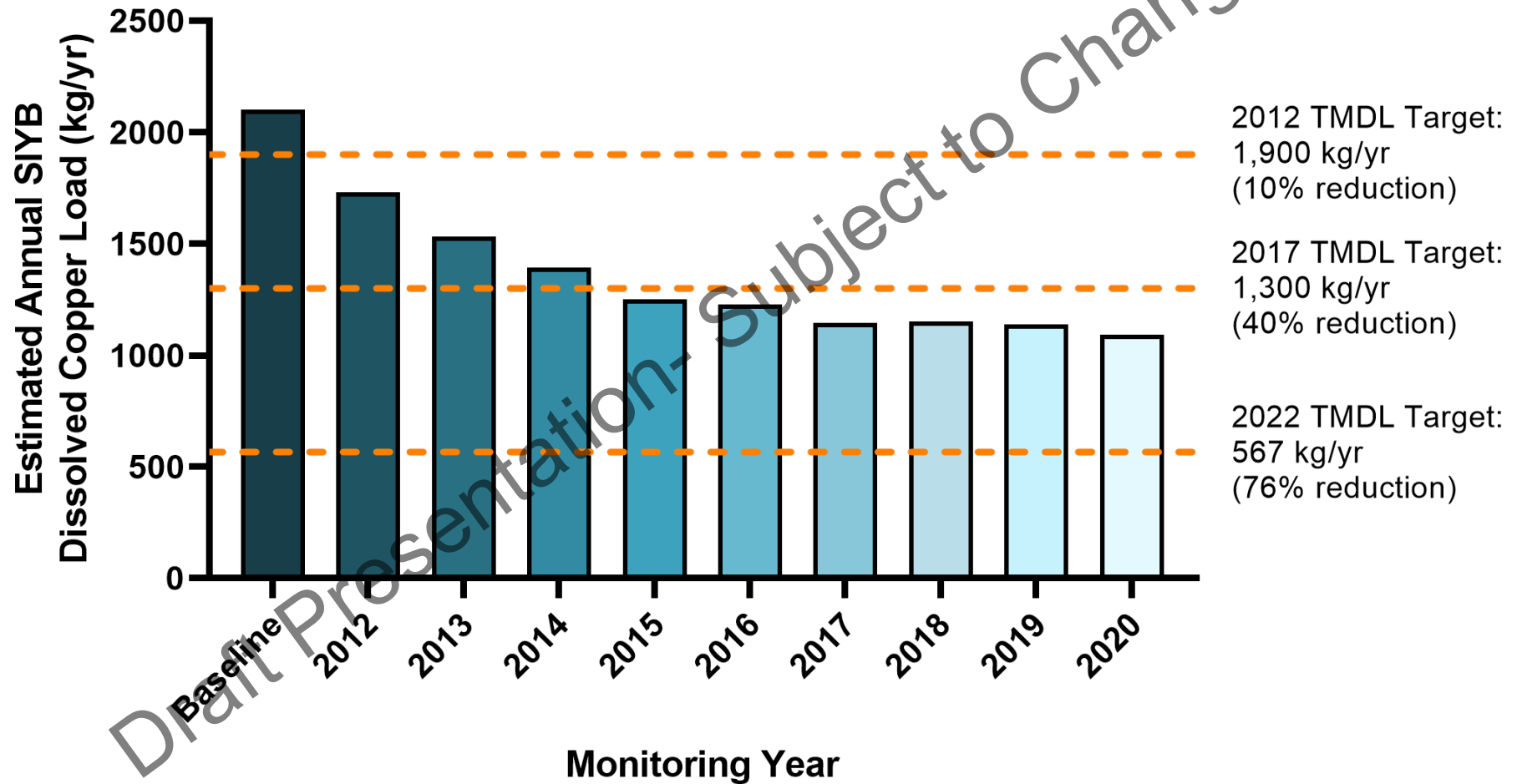
Journey Towards Compliance

- Shift management efforts over time based on data-driven results
- Efforts modified based on trajectory and trends
- Program assessment and refinement when needed



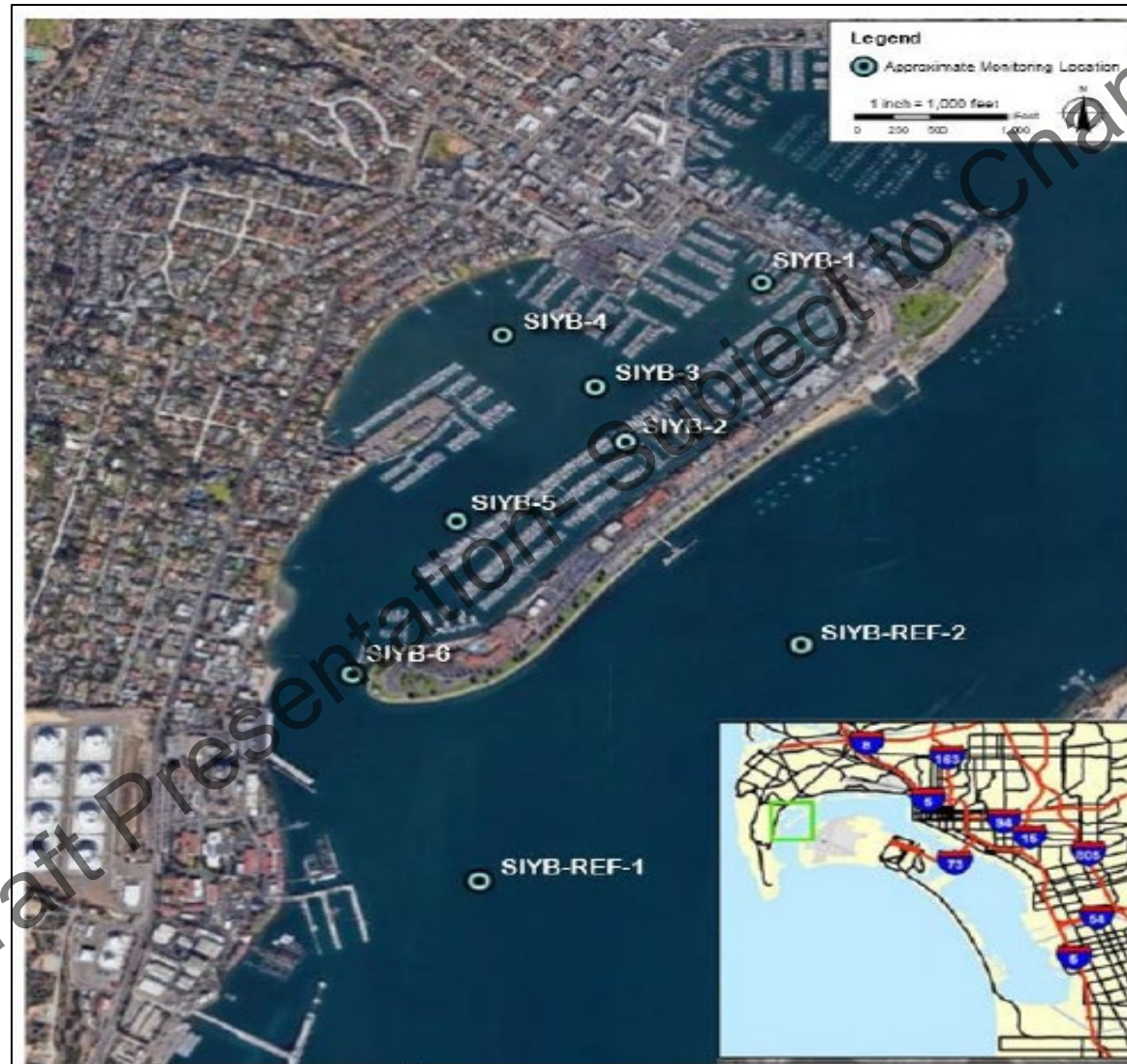
Copper Load Estimate

Based on TMDL load allocations per source



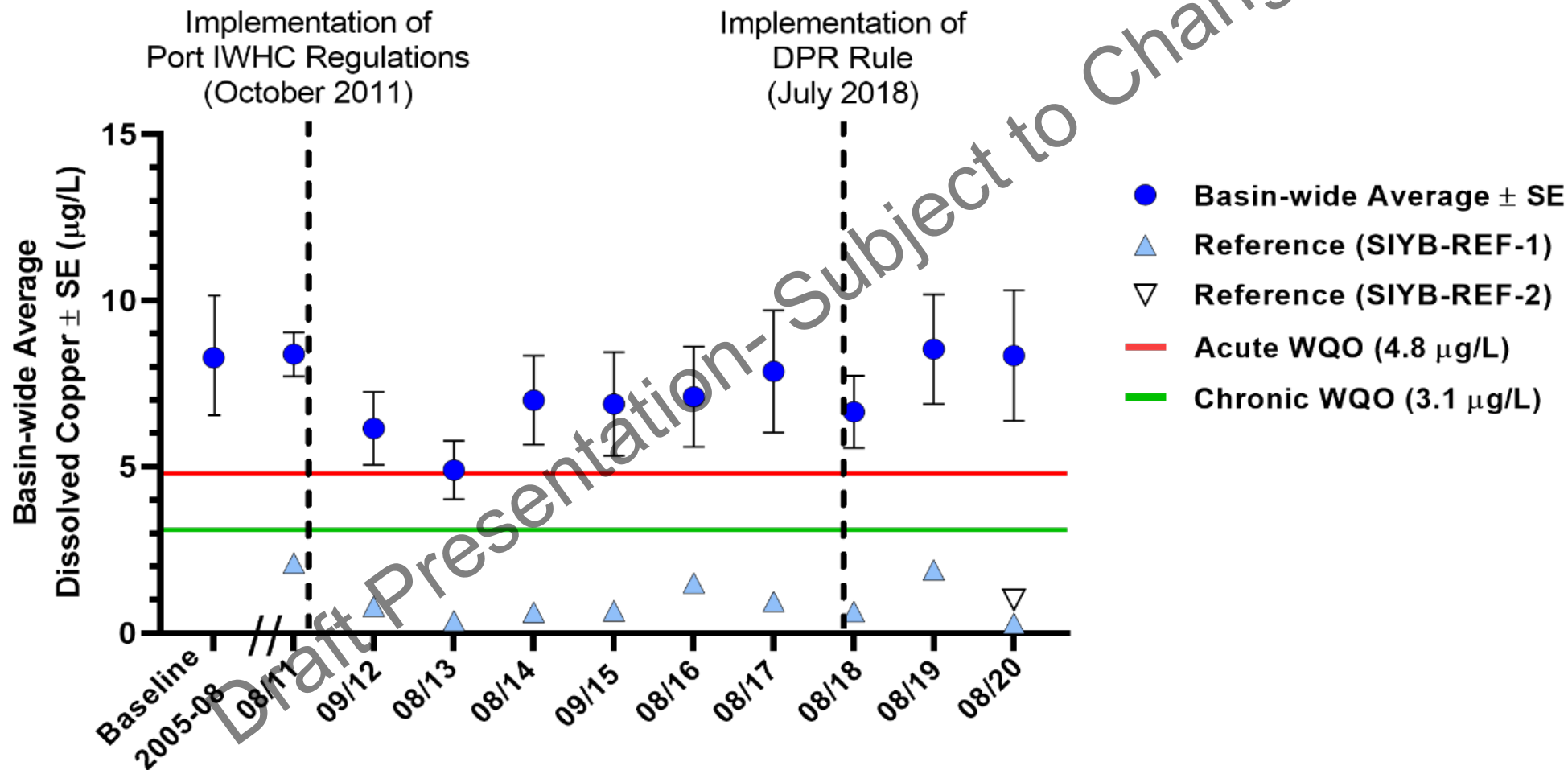
Source: 2020 SIYB Annual Monitoring & Progress Report, Wood, March 2021

TMDL Water Quality Sampling Stations



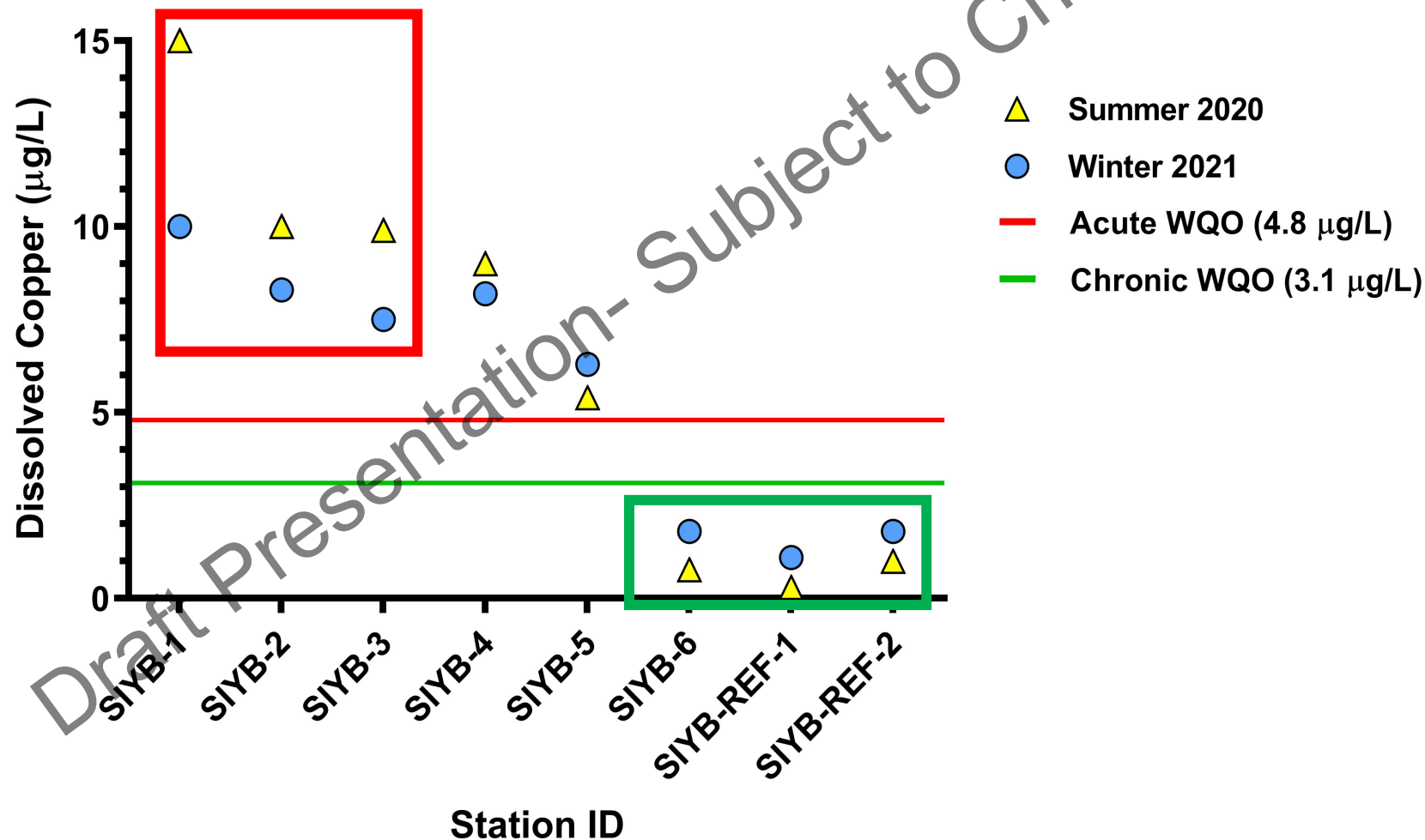
Water Quality-August 2020

Basin Average for Dissolved Copper

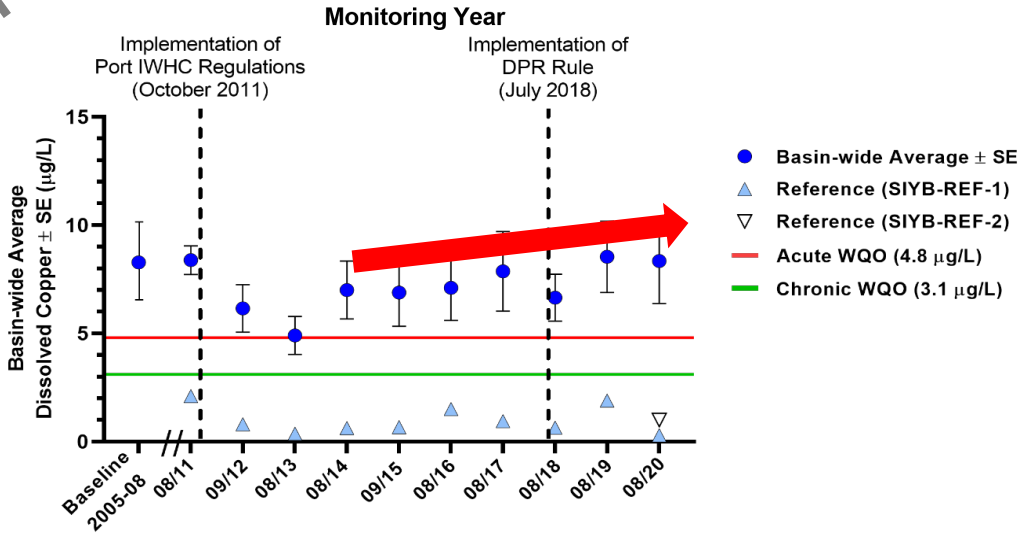
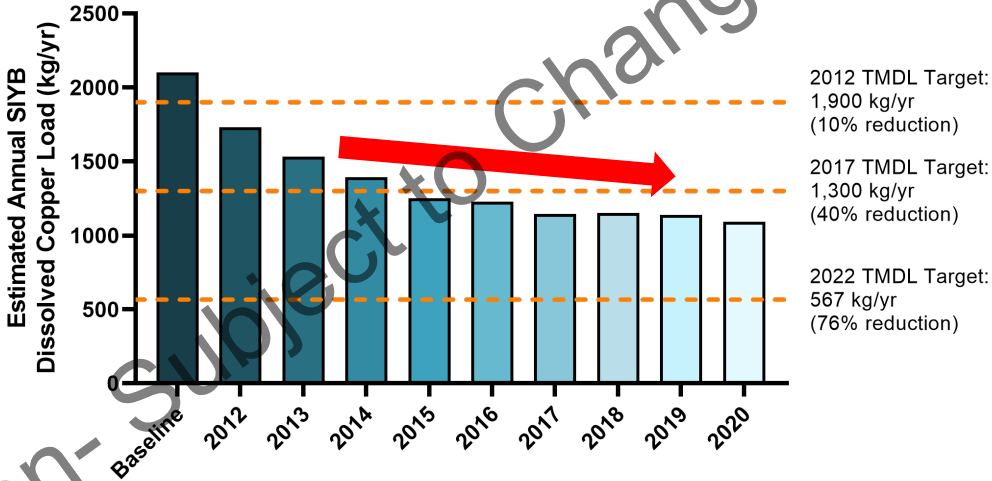


Water Quality- Winter 2021

Site by Site Average for Dissolved Copper



Water Quality and Loading Disconnect



Source: 2020 SIYB Annual Monitoring & Progress Report, Wood, March 2021

Adaptive Management

Recent Copper Reduction Program Efforts

Feedback

- Stakeholder Meetings
- Public Comment
- In-Water Hull Cleaning Surveys
- SIYB Port-Marina Working Group
- Regional Board



Model Review

- Review of TMDL load allocations
- Compared copper loads to cleaning events
- Cleaning frequency may affect load contribution



Water Quality Data

- Basin average remains above water quality standards
- Bay sources not contributing
- Further analysis of loading/sources needed



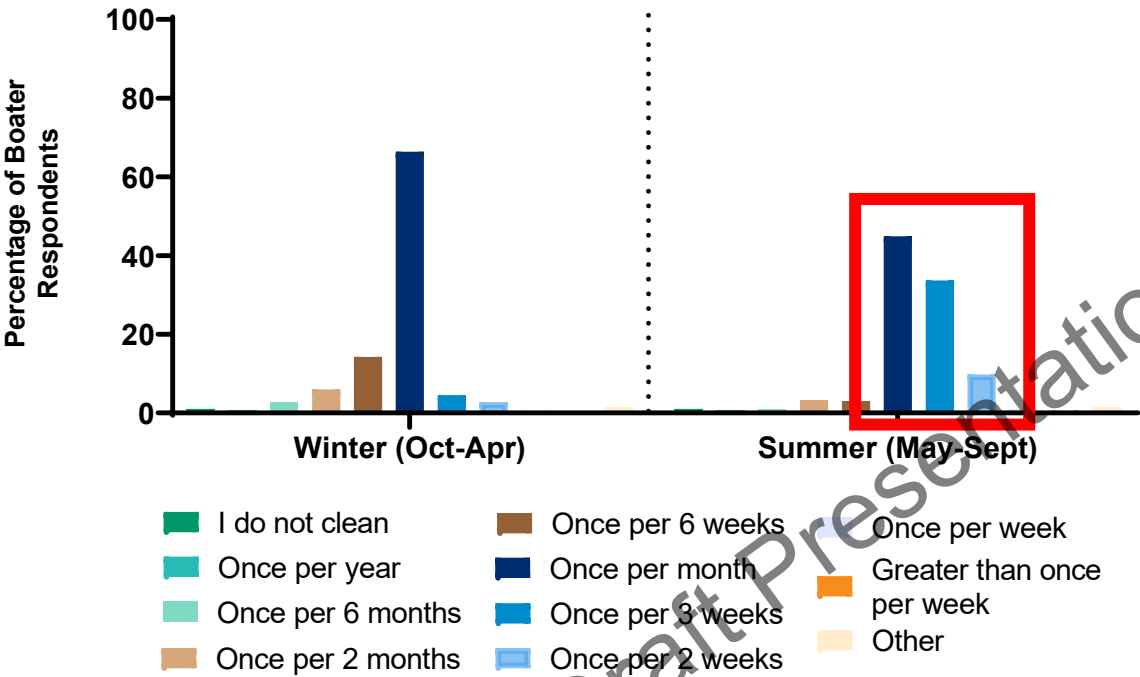
Filling the Water Quality Data Gap

In-Water Hull Cleaning Survey Results

Frequency of cleaning

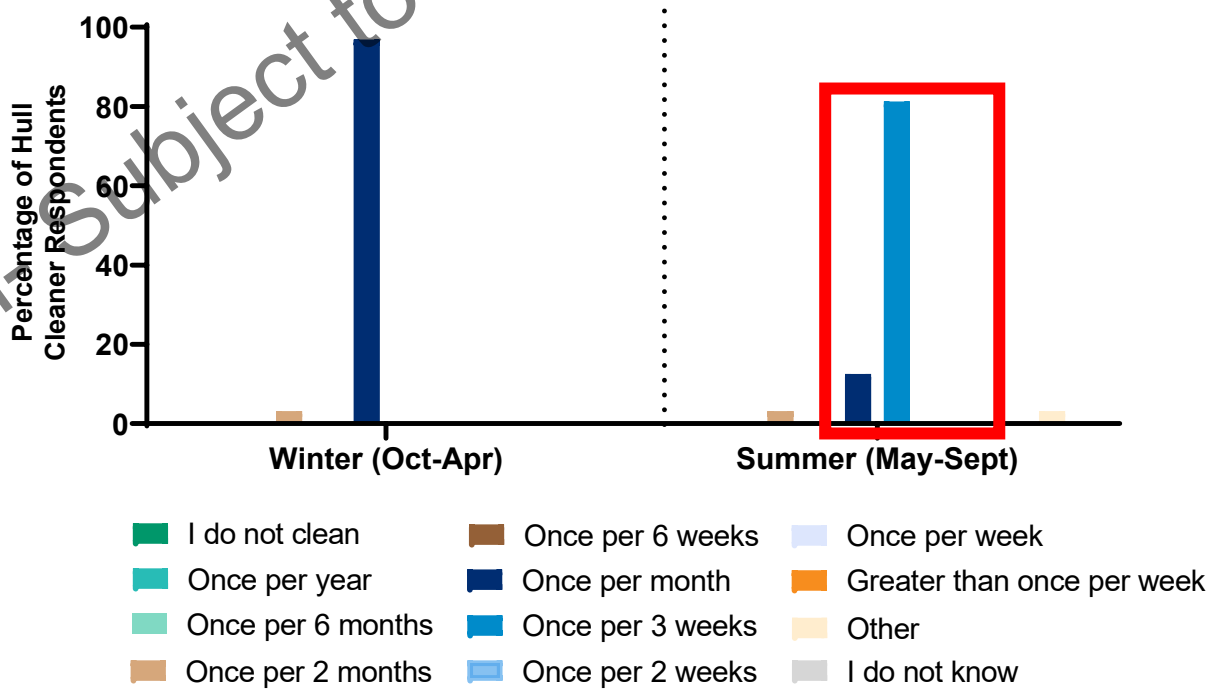
Boaters

Average Frequency of Cleaning In Winter vs. Summer



In-Water Hull Cleaners

Average Frequency of Hull Cleaning in Winter vs. Summer



SIYB Vessel Profile: *Cleaning Projections*

2,169 vessels in SIYB (2020 TMDL Report)

- 2051 with Copper Paint
- 118 with non-copper/no paint

Standard Practice: 15 cleanings/year

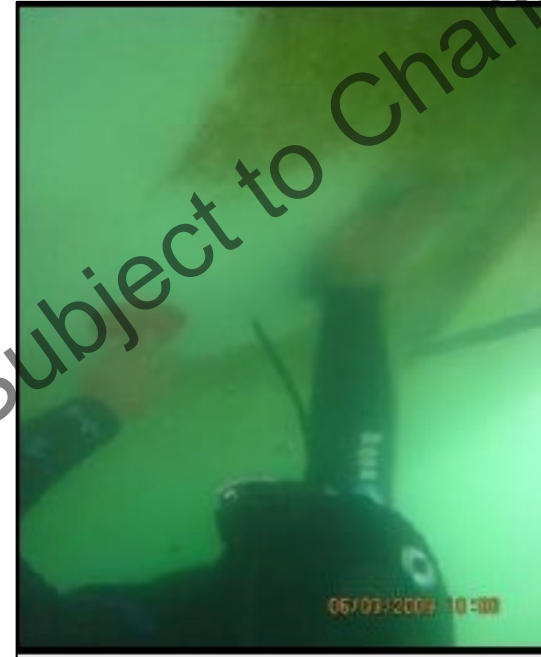
The Result: 30,765 / year 592 / week 84 / day

- Post-cleaning copper water quality can range from 4-50 µg/L
- Effects of cleaning last 30 days

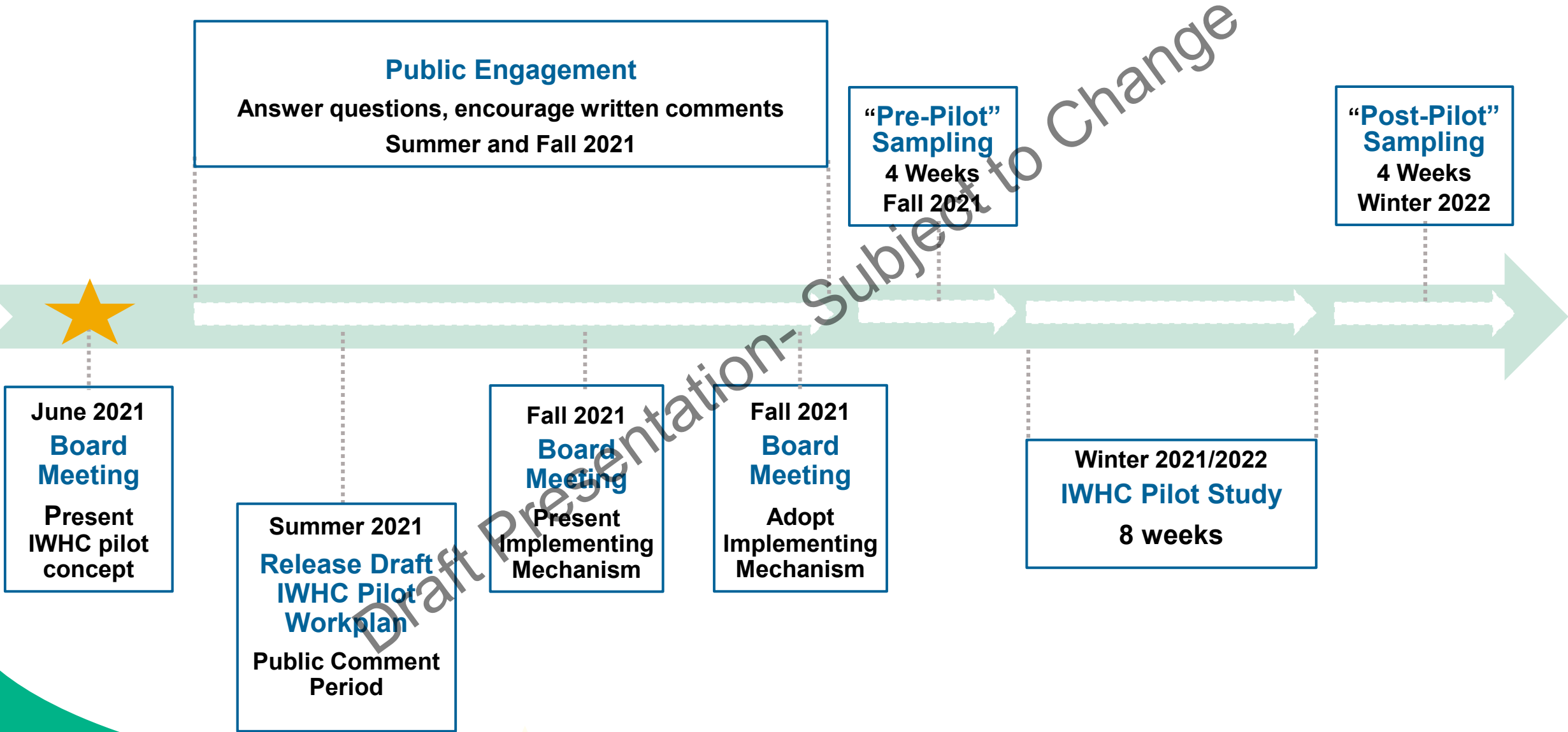
In-Water Hull Cleaning Pilot Study

Explore Relationship Between Hull Cleaning Activities and Water Quality Conditions

- Temporary 8-week pause to in-water hull cleaning in Shelter Island Yacht Basin
- Real-time sampling of water before, during and after the pause period
- Implementation mechanism for pilot study: determine voluntary or mandatory approach



In-Water Hull Cleaning Pilot Study



Staff Request for Board Direction

1. Direction to Staff on Initiating an In-Water Hull Cleaning Pilot Study That Would Require a Temporary Pause of In-Water Hull Cleaning of Vessels With Copper-Based Paint in Shelter Island Yacht Basin for an Eight-Week Period Starting Approximately Mid-December 2021 and Continuing Through Mid-February 2022
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