



May 30, 2019

Marina del Rey Harbor **DISSOLVED COPPER REDUCTION INITIATIVES UPDATE**

LOS ANGELES COUNTY
BEACHES&HARBORS



Agenda

- 1) MdR Harbor Pilot Hull Paint Study (Pilot Paint Study)
 - a) Overview
 - b) Phase I Performance Results
 - c) Next Steps
- 2) Other Copper Reduction Initiatives
- 3) Other Items

Pilot Paint Study

Study goal: Convert 100 boats from copper to non-biocide paint, in an effort to evaluate the effectiveness of available non-biocide paints.

Phase I: Conversion of County-owned boats to non-biocide paint

- Data Collection
- Paint Conversion
- Tracking and Assessment

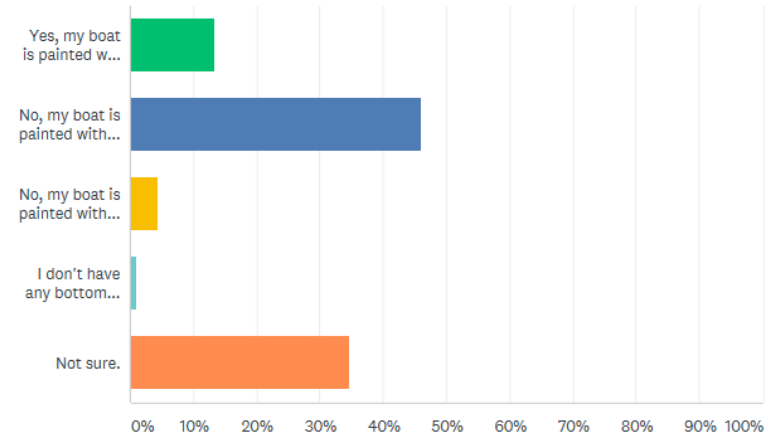
2017				2018											
Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Kickoff	Data Collection and Contracting					Paint Conversion (County)					Tracking			Study Summary	

Pilot Paint Study – Data Collection

- Boaters
- Paint Companies
- Boat Yards
- Hull Cleaners

Do you currently have non-biocide hull paint on your boat?

Answered: 89 Skipped: 0



Intersleek Non-Biocide Hull Paint Questions

	International Paint Intersleek 1100SR
What is paint base?	fluoropolymer
Hard or soft non-biocide?	Soft (not ablativ)
Recommended boat type/usage for paint?	Power and sail—works best for moving vessels
Application method?	Roll or spray
Any restrictions on hull composition/ material?	none
Special application requirements or equipment?	Airless application preferred
VOC?	264 gr/tr VOC will not vary for brush, roll or spray
Does boat hull need to be stripped?	Yes, unless you are just doing touch up on existing Intersleek
Special primer required?	Interprotect 2000 or Interprotect HS or Interprotect VOC
Number of paint coats recommended?	1 tie coat, 1 finish coat
Price per gallon?	Get quote from local boatyard—approximately \$850/mixed gallon
Approx. pricing per foot?	Get quote from local boatyard
Frequency of winter hull cleaning in Marina del Rey Harbor (Southern CA) assuming limited use?	Twice monthly
Frequency of summer hull cleaning in Marina del Rey Harbor (Southern CA) assuming limited use?	Weekly
Special cleaning requirements or recommendations?	Soft brush or cloth
What type of warranty is offered?	none
How long before repainting is recommended?	Depends on usage and frequency and aggressiveness of cleaning
Repainting application process (compared to initial painting)	Hydroblast hull, wipe down entire surface with Toluene, fix repair areas first—remove down to substrate, re-prime, apply tie-coat to affected area, then apply final Intersleek topcoat to entire hull
References for boatyards that have applied the paint?	Windward, The Boatyard (Marina del Rey) Shelter Island Boatyard in San Diego
What studies involving this paint have been completed?	None. IRTA did one years ago, but conclusions were flawed as they were based on faulty assumptions
Company willing to offer discount for pilot program?	No
How much of a discount is the company willing to offer?	No
Contact Person/Info	Asheley D. Bowles Asheley.Bowles@akzonobel.com Product Stewardship & Regulatory Affairs Specialist Performance Coatings North America



Challenges: Limited Non-Biocide Paint/Coating Options



Not tested on recreational boats; based in Belgium

CERAMIC PRO

Clear Coating/
Not a Paint

Pilot Paint Study – Paint Conversions

- As of August 2018, 17 County vessels were stripped and repainted with non-biocide hull paints



6 DBH Boats



2 Fire Boats



9 Sheriff Boats

Pilot Paint Study – Performance Tracking

- Diver Inspections
 - Hull Cleaning Effort Assessment
 - Fouling Level and Paint Condition Assessment
- Department Assessment

Fouling Level

Light → Normal → Excessive

1 → 2 → 3 → 4 → 5

Hull Paint Condition

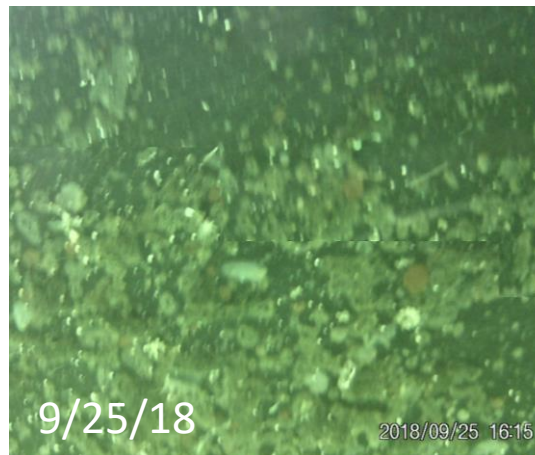
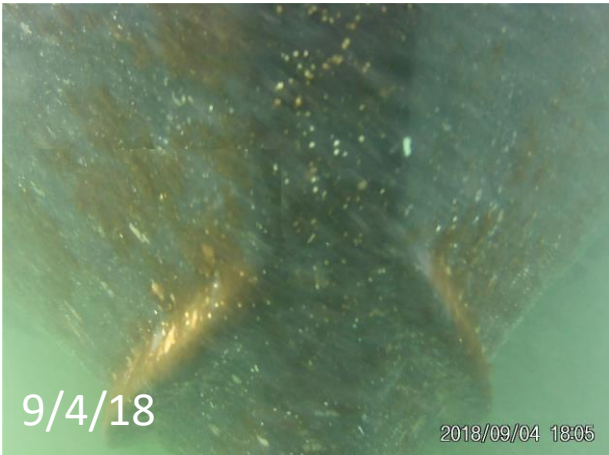
Excellent → Normal → Fair

1 → 2 → 3 → 4 → 5

Pilot Paint Study – Performance Results

Boat #1386 painted with Hullspeed F-Series

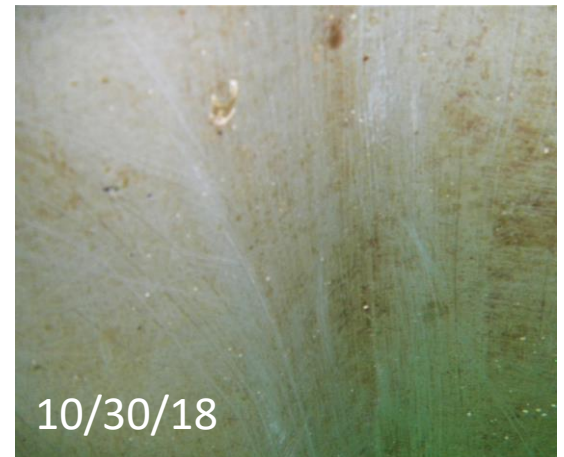
Typical Rating = Excessive to Normal fouling / Good to Normal paint condition



Pilot Paint Study – Performance Results

Boat #55 painted with Hullspeed 3000

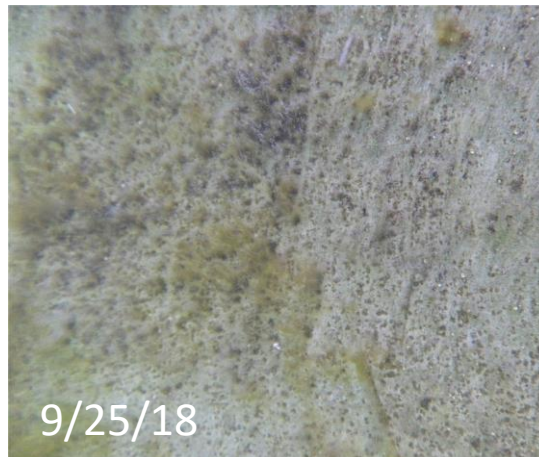
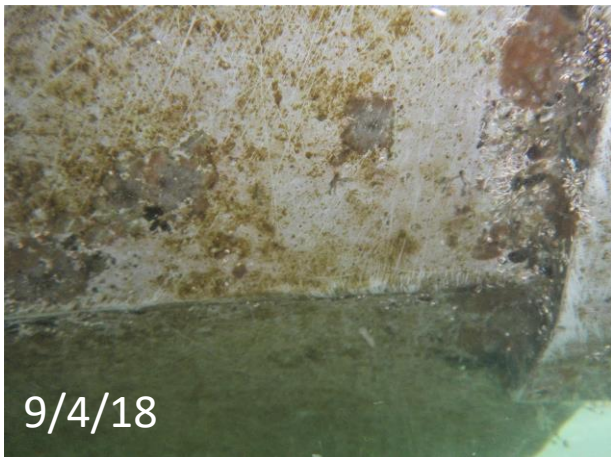
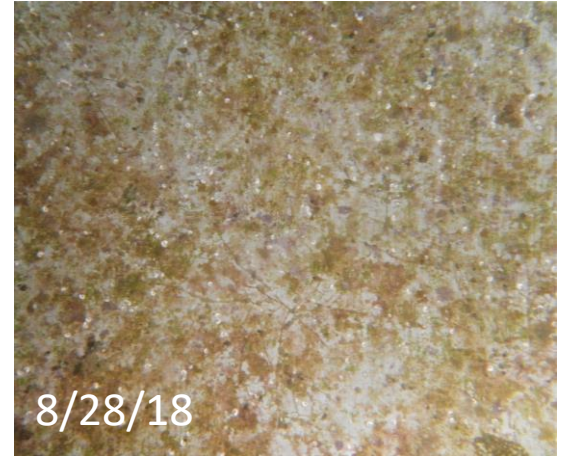
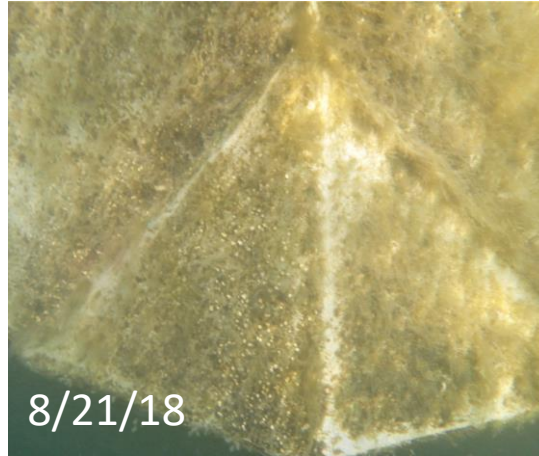
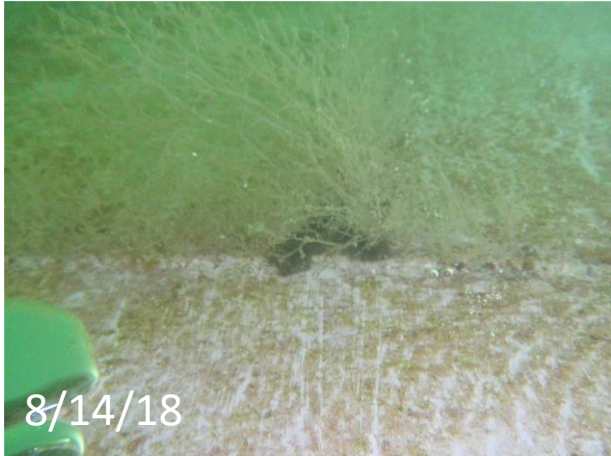
Typical Rating = Excessive to Normal fouling / Fair to Normal paint condition



Pilot Paint Study – Performance Results

Boat #10 painted with CeRam-Kote 54 SST

Typical Rating = Excessive to Normal fouling / Fair to Normal paint condition



Pilot Paint Study – Performance Results

Boat #4311 painted with Intersleek 1100SR

Typical Rating = Light to Normal fouling / Excellent to Normal paint condition



Pilot Paint Study – Performance Results

- Hard non-biocides (i.e. Hullspeed and CeRam-Kote) – required frequent, aggressive cleaning and still had normal to excessive fouling
 - Excessive fouling impacts vessel speed, and has serious implications for County’s safety boats
- Soft non-biocide (Intersleek) – Easy to clean and had light to normal fouling
 - Intersleek has foul-release properties which makes it easy to clean
 - Foul-release non-biocides are not well studied

Intersleek 1100SR

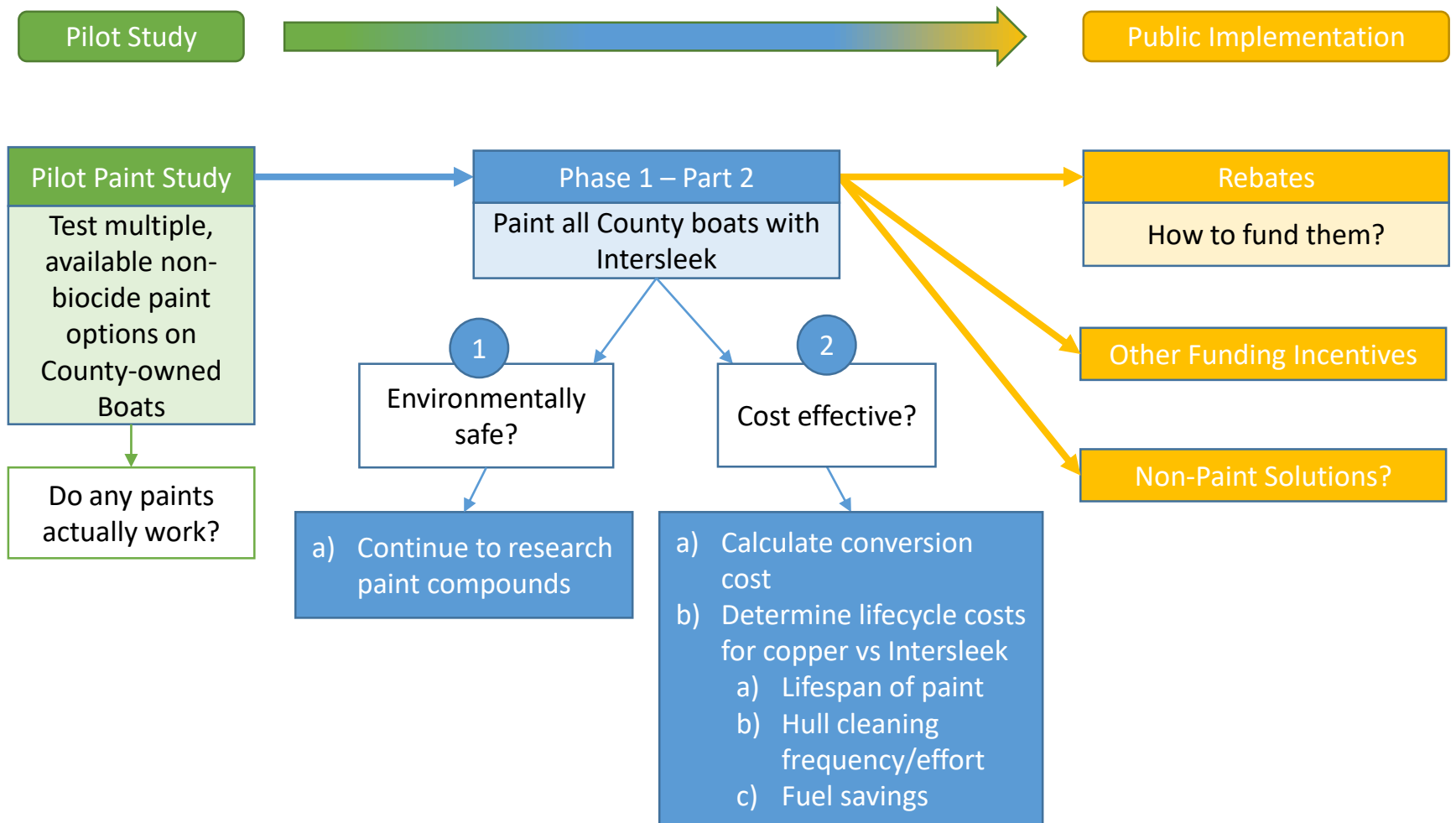
What we know

- Developed for Commercial Vessels
- Works well on frequently used boats
- High up front cost
- Easily cleaned
- Easily damaged

What we want to find out

- How frequently it needs to be cleaned
- Performance on more stationary boats
- Longevity
- Performance cost savings
- Potential environmental impacts?

Next Steps



Pilot Paint Study – Costs

Phase I – Cost to Convert County Boats

	# of Boats	Total Cost (Copper)	Total Cost (Non-Biocide)
DBH	6	\$ 9,180	\$ 33,048
Sheriff	9	\$ 16,500	\$ 73,980
Fire/Lifeguard	2	\$ 4,380	\$ 18,110
TOTAL	17	\$ 30,060	\$ 125,138

- County Boat lengths range from 22' to 41'
- Cost per boat ranges from \$3,870 to \$15,010
- ~ \$355/ft to convert to Intersleek vs. \$220/ft for hard-non-biocides vs. \$60/ft for repainting with copper

Phase II – Cost to Convert County Boats

It will cost **\$164,716** to convert 13 County boats from hard non-biocide hull paint to Intersleek.

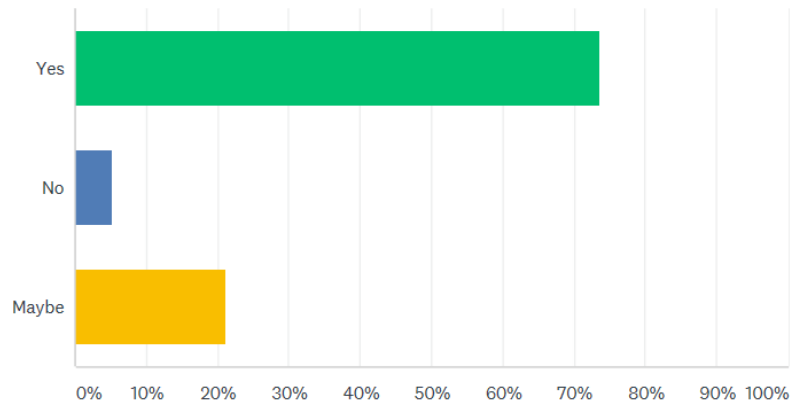
Grand Total: \$289,854

Challenges: Rebate Program Cost

Q2

If you currently have a biocide hull paint (e.g. copper, zinc, econe, etc.), would you be interested in converting your boat to a non-biocide hull paint (e.g. ceramic, silicone, etc.) through a rebate/discount program being offered through the Department of Beaches and Harbors?

Answered: 76 Skipped: 6



ANSWER CHOICES	RESPONSES
Yes	73.68% 56
No	5.26% 4
Maybe	21.05% 16
TOTAL	76

Challenges: Rebate Program Cost

- Average size of boats is 32' (based on interest list)
- Average cost for 32' boat is \$11,360

Rebate Breakdown Per Boat

	What Boater would pay for <u>Non-Biocide</u> paint job (32' boat)	What Boater would pay for <u>Copper</u> paint job (32' boat)	Difference between Non-biocide vs. Copper
No Rebate	\$11,360	\$1,900	\$9,460
50% Rebate	\$5,680	\$1,900	\$3,780
65% Rebate	\$3,976	\$1,900	\$2,076
70% Rebate	\$3,408	\$1,900	\$1,508
75% Rebate	\$2,840	\$1,900	\$940
85% Rebate	\$1,704	\$1,900	\$(196)

After rebate, non-biocide paint cost is similar to copper paint

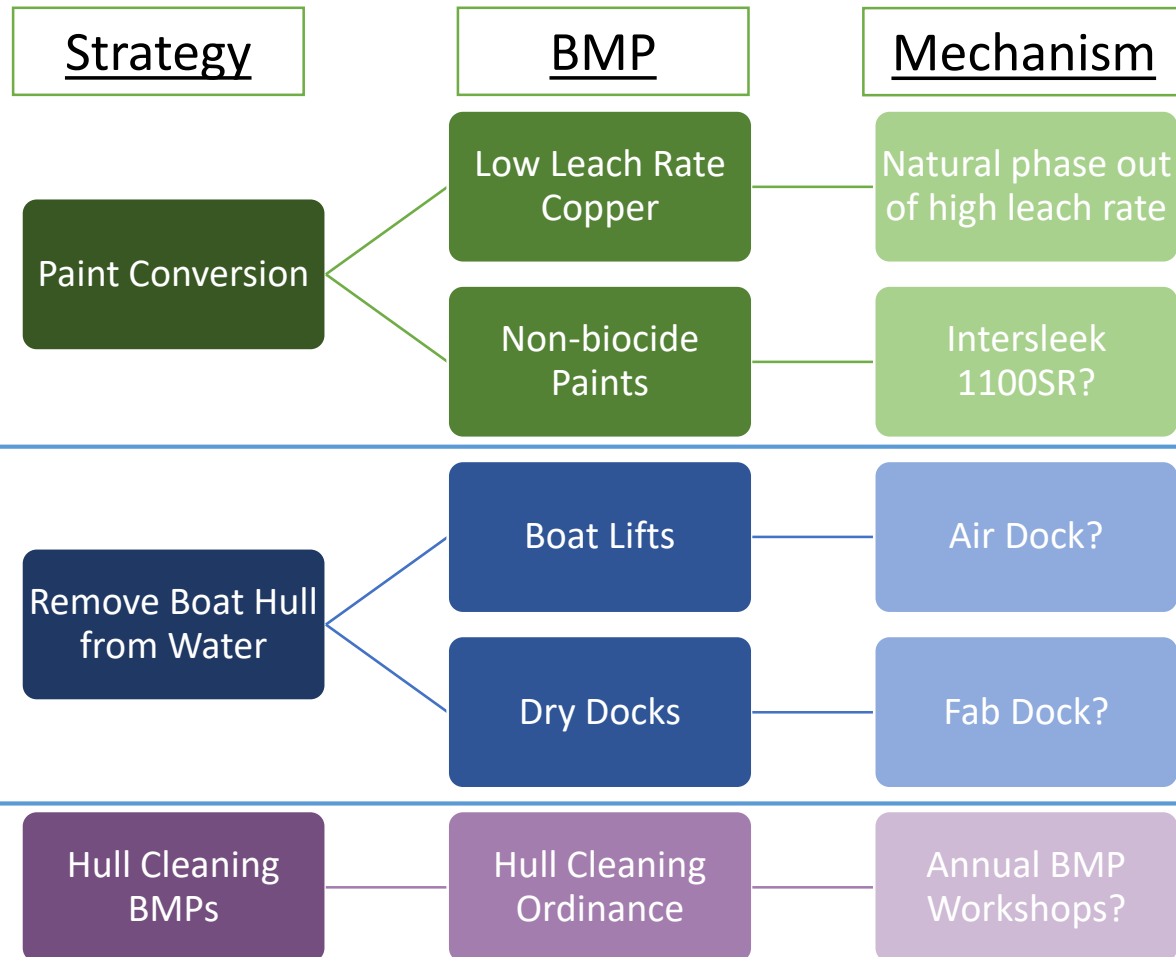
Challenges: Rebate Program Cost

- Potential rebate program cost of over \$800,000

Total Rebate Program Cost

	Rebate Amount County Pays Per Boat	Remainder Boater Pays after Rebate	Total Rebate Amount County would pay for 87 boats
50% Rebate	\$5,680	\$5,680	\$494,160
65% Rebate	\$7,384	\$3,976	\$642,408
70% Rebate	\$7,952	\$3,408	\$691,824
75% Rebate	\$8,520	\$2,840	\$741,240
85% Rebate	\$9,656	\$1,704	\$840,072

Other Copper Reduction Strategies



Hull Cleaning BMPs

- Hull Cleaning BMP Ordinance became effective July 2018
- First In-water Hull Cleaning BMP training hosted by DBH February 2019
- Future trainings in the process of being scheduled



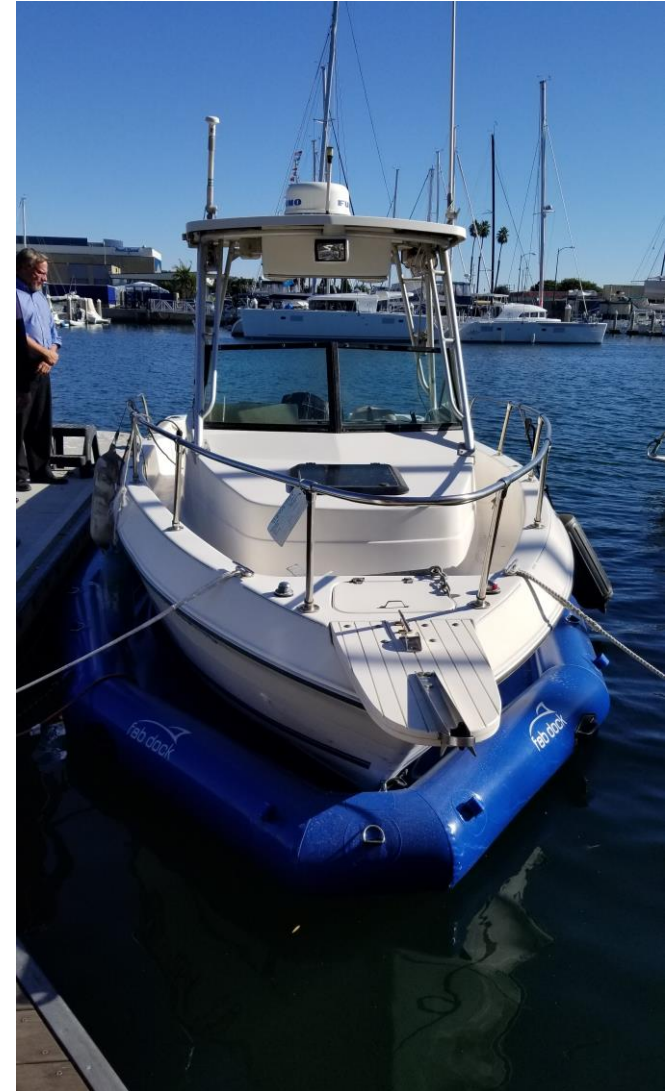
Boat Lift Pilot

- 319(h) Non-Point Source Pollution Grant terminated
- Trial of Boat Lift in Anchorage 47 abandoned due to liability concerns

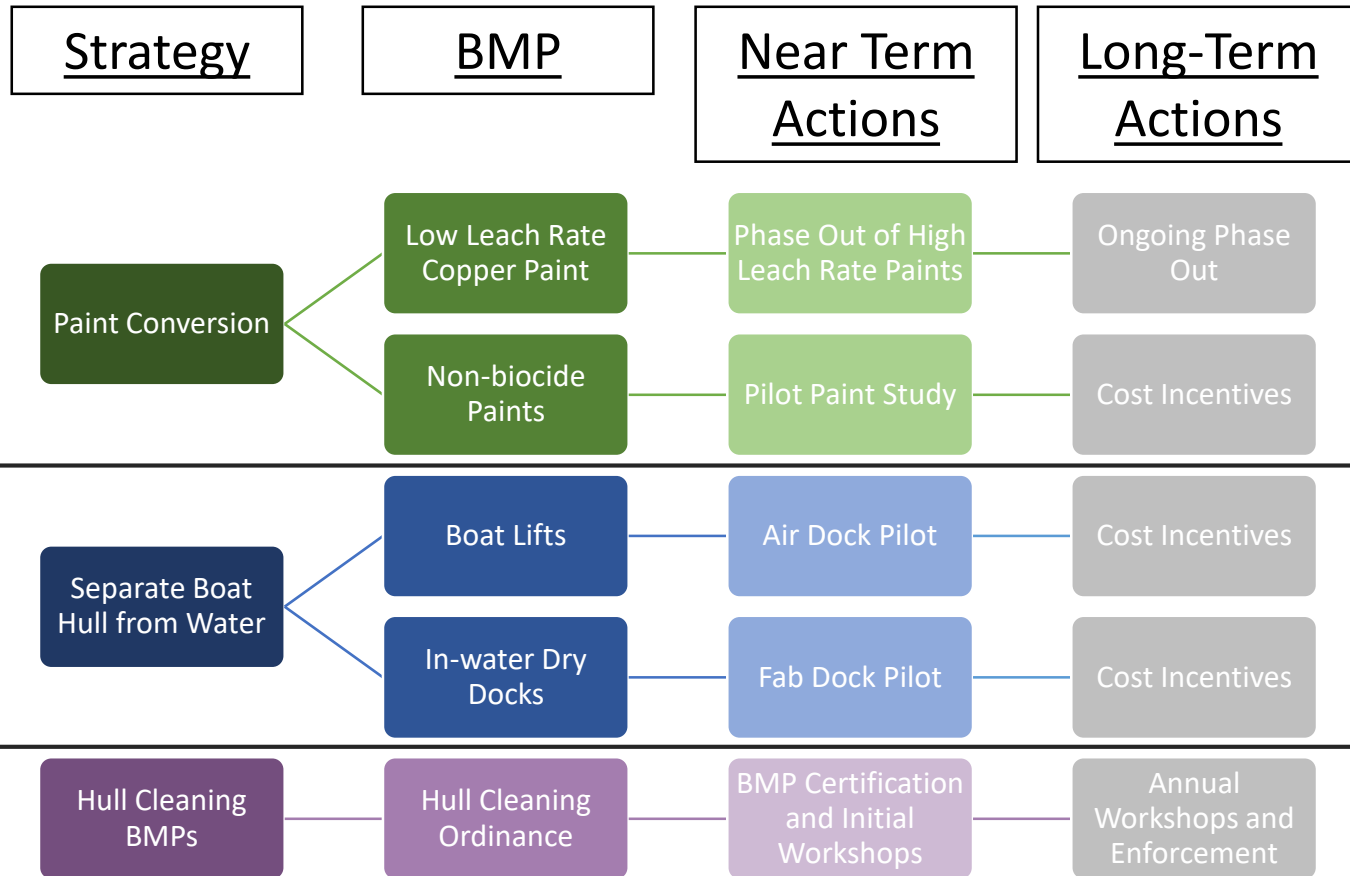


In-Water Dry Docking Systems Pilot

- Concluded 6-month trial of a Fab Dock unit with a Sea Scouts Boat
- Purchasing 1-2 Fab Docks for use at Anchorage 47



Other Copper Reduction Strategies



Questions?

Maral Tashjian

Office: (424) 526-7750

MTashjian@bh.lacounty.gov

Jennifer Mongolo

Office: (424) 526-7747

Jmongolo@bh.lacounty.gov

Michael Tripp

Office: (424) 526-7745

MTripp@bh.lacounty.gov

County of Los Angeles
Department of Beaches and Harbors
13837 Fiji Way
Marina del Rey, CA 90292



Marina del Rey Harbor

