

CITY OF SANTA BARBARA WATERFRONT DEPARTMENT

MEMORANDUM

Date: April 19, 2018
To: Harbor Commission
From: Scott Riedman, Waterfront Director
Subject: **Annual Review – Clean Marina Program**

RECOMMENDATION:

That Harbor Commission review and consider an annual report on the Department's Clean Marina Program.

BACKGROUND:

City Council adopted a Clean Marina Program (Program) in 2002. Its goal is to achieve and maintain, via feasible means and alternatives, best management practices and a clean harbor environment for people, aquatic life, and seabirds. Staff reports annually on the status of the Program to the Harbor Commission.

The Program includes six elements:

1. Facilities for Boaters
2. Water Quality
3. Best Management Practices
4. Pollution Prevention and Abatement Projects
5. Education
6. Compliance and Enforcement

DISCUSSION:

1. Facilities for Boaters

A. Sewage Pump-Outs

The harbor's five sewage pump-outs have accommodated boaters and helped reduce sewage spills for 15 years. Total pump-out use in FY '17 was 5,738 minutes (near-average for the past five years), diverting 230,000 gallons of effluent to the City's sewer system. Inspections conducted routinely by Heal the Bay, an environmental non-profit that works with the State Division of Boating and Waterways, indicate the pumps are in excellent condition and working to capacity.

Sewage Pump-Out Use in Minutes:

Year	M1 East*	M1 West	Fuel Dock	Launch Ramp	Total
FY '03	5,165	1,253	1,421	73	7,912
FY '04	4,957	1,069	1,310	135	7,471
FY '05	4,758	758	2,183	3	7,764
FY '06	4,384	1,657	2,608	362	9,011
FY '07	3,796	1,269	1,666	27	6,785
FY '08	3,834	1,172	2,207	15	7,228
FY '09	3,690	976	1,464	252	6,382
FY '10	3,876	896	1,336	179	6,287
FY '11	4,128	884	1,204	217	6,433
FY '12	3,652	1,807	2,085	198	7,742
FY '13	3,802	336	2,249	437	5,938
FY '14	3,082	417	1,864	224	5,587
FY '15	3,002	1,221	852	143	5,218
FY '16	4,323	521	762	53	5,659
FY '17	3,853	898	898	89	5,738

* Two stations, P/Q finger and R/S finger

B. Bilge-Water Pump-Out

A bilge-water pump-out at the Fuel Dock accepts bilge water mixed with either oil or diesel, but cannot accept gasoline or “hot loads” with contaminants like soap, which must be disposed of at a Household Hazardous Waste Facility. The pump-out sends oil to a waste-oil container and residual water into the City’s sewer system. The facility removed 6,315 gallons of bilge water in 2017, a number slightly below the amount pumped in 2016, but above the facility’s 14-year average.

Bilge-Water Pump-Out Use:

Year:	2003	2004	2005	2006	2007	2008	2009	2010
Minutes:	1,086	1,602	1,416	1,353	1,546	N/A	629	948
Gallons:	5,430	8,010	7,080	6,765	7,730	N/A	3,145	4,740
Year:	2011	2012	2013	2014	2015	2016	2017	
Minutes:	813	895	728	927	1,474	1,580	1,263	
Gallons:	4,065	4,475	3,640	4,635	7,370	7,900	6,315	

C. Debris Nets

Over 40 debris nets located on finger docks help boaters remove light debris from the harbor. Some nets disappear or rot out each year. Maintenance staff typically identifies nets that need replacement during dock construction and repair. In 2017,

they replaced 12 nets, slightly up from the past several years, consistent with the age of the nets.

Debris Nets Replaced:

Year:	2008	2009	2010	2011	2012	2013	2014	2015
Nets:	15	7	8	6	11	10	10	10
Year:	2016	2017	2018	2019	2020	2021	2022	2023
Nets:	12	14						

D. Waste-Oil Disposal

The Department operates waste-oil disposal stations at the Fuel Dock, Marina 2 and Marina 4. These free facilities also accept oil filters, anti-freeze and oil-absorbent bilge pads. Staff tracks gallons of oil received at these stations. The FY '17 total of 5,330 gallons approximately equaled the facilities' seven-year average.

Waste-Oil Disposal:

Year:	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Gallons:	7,585	6,675	7,145	2,500	4,620	5,935	5,330

E. Marine Battery Collection

The Department provides a marine battery collection bin on the City Pier near the Fuel Dock. Interstate Batteries hauls away the batteries for free. In FY '17, it received 180 for recycling—consistent with the previous two years.

Batteries Recycled:

FY '10	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
350	300	290	200	220	180	180	180

F. Fishing Line Recycling

The Department provides three fishing-line recycling stations – one at Stearns Wharf Bait and Tackle and one each on Sea Landing's passenger-carrying fishing vessels *Stardust* and *Coral Sea*.

In 2017, anglers deposited five pounds of line at Stearns Wharf, consistent with 2015 and 2016, and 24 pounds of line aboard the *Stardust* and *Coral Sea* combined, compared to 30 pounds in 2016 and 25 pounds in 2015. This slight dip is attributable to reduced passenger loads in December, due to the effects of

regional wildfires. Since Santa Barbara began the practice of recycling line from passenger boats, dozens of other boats coast-wide have done the same.

2. Water Quality

A. Monthly “Dry Season” Harbor Water Quality Monitoring

Seven stations were tested for three bacterial indicators between April and September 2017 (42 samples total). No test results indicated levels above state standards for body contact. Test results are contained in Attachment 1. A map of the harbor’s bacterial sampling sites is included as Attachment 2.

B. Dissolved Oxygen Tests

The Department tests dissolved oxygen (D/O) levels in the harbor to predict and report low-oxygen events that may contribute to fish or invertebrate die-offs. Staff conducted 12 D/O tests in 2017. Results (Attachment 3) indicate generally good levels, except for sub-optimal readings in January, when hundreds of tons of anchovies schooled inside the harbor. Shoals of baitfish are known to deplete oxygen from harbors, sometimes triggering a chain-reaction that results in fish die-offs. Though only a few deceased fish were observed, tests conducted on January 10th and 18th indicated remarkably low D/O levels, results of which were posted on marina gates. The following week, D/O levels returned to normal, and remained so during standard monthly testing in February 2017. A few sub-optimal readings were also noted in October—not atypical, since warm water holds less D/O than cold water, and October is often the warmest-water month of the year.

C. Anti-Fouling Paints (AFPs)

In response to studies indicating elevated copper levels in many Southern California harbors, the Department has experimented with several non-copper AFPs since 2009. All proved inadequate for Harbor Patrol’s extensive daily use, either wearing off too soon (requiring more frequent reapplication at considerable expense), and/ or not adequately protecting hulls against marine growth.

Nevertheless, non-copper AFPs continue evolving, and a product currently on the market (Petit Hydrocoat Eco) shows promise. The Facilities Division applied this non-copper (biocide) AFP to its 18’ work boat, which sees much less use than harbor patrol vessels. The so-called “tough boat” also doesn’t travel fast and is rarely used in open-ocean or debris-heavy conditions. Under these limited circumstances Hydrocoat appears to be performing well, though staff currently has no plans to apply it to harbor patrol boats.

D. Clean Marina Programs

The “Clean Marinas Program” is a multi-state (though California-centric), industry-

sponsored certification program designed to reflect compliance with strict environmental and best-management practices to prevent ocean pollution. Since 2014, the Program has certified 138 California marinas (up 10 since last year). Santa Barbara Harbor was certified in 2006, and recertified in 2011 and 2016. Including its own environmental program, which began in 2002, Santa Barbara remains the only known California harbor with two comprehensive Clean Marina programs that both overlap and complement each other.

In addition to these two Clean Marina Programs, the Green Business Program of Santa Barbara County recently certified the Waterfront Department as a Green Business. This program involves creating an (internal) Environmental Policy Statement that guides decision making and policy adoption in compliance with requirements ranging from reuse/ recycle to conservation of fossil fuels and employee education (Attachment 4).

3. Best Management Practices (BMPs)

A. Storm Water Pollution Prevention Plan

The Department complies with federal Clean Water Act standards through a Stormwater Pollution Prevention Plan (SWPPP), whose goal is to prevent pollution discharges into the harbor. The SWPPP includes a description of the entire Waterfront and potential sources of stormwater discharge (like parking lots and trash enclosures), plus BMPs to maintain the area so stormwater is not contaminated as it flows off Waterfront property.

In 2014, modifications to SWPPP regulations increased the required number of stormwater samples from two to four a year, and visual inspections from quarterly to monthly, to better characterize a site's potential to discharge polluted stormwater runoff. Many agencies expressed concern about the cost of increasing the number of stormwater samples. The State Water Resources Board (SWRB) responded by including regulations allowing reduction of stormwater samples back to two per year if sample results were consistently lower than the state's acceptable pollutant standards. All stormwater sample results for the Waterfront have been below the state's acceptable pollutant standards, so the number of required samples has been reduced to two per year – a reflection of landside BMPs minimizing pollutant discharges from stormwater runoff.

B. Storm Water Management Plan

In 2009, the City completed a state-mandated Stormwater Management Plan (SWMP), which includes several Minimum Control Measures (MCMs—like public outreach, illicit discharge detection and BMPs) to help maintain good water quality in our harbor. As part of the City's overall SWMP, the Waterfront developed MCMs specific to its operations. To date, the Waterfront is compliant

and current with the SWMP and will continue to work closely with the Regional Water Quality Control Board to modify the document as appropriate.

C. Diver BMPs

All hull-cleaning dive companies are trained and certified in BMPs for minimizing paint discharge into the harbor. Patrol Officers are similarly trained. The California Professional Divers Association conducted another training and five-year recertification course at the harbor in June 2016.

D. Staff and Contractor BMPs

City staff and City contractors observe BMPs during maintenance, repair and construction work at the Waterfront:

- Vacuuming debris on decks or roadways during work
- Power-washing and/ or scrubbing roadways and parking lots for oil and stain removal (recovered and deposited into sewer system)
- Monthly trash-enclosure cleaning at Waterfront Center Building
- Placing booms around projects sites near the water
- Placing crew in skiffs in the water to scoop debris
- Monitoring beaches to ensure all debris is retrieved
- Removing any leaking equipment from service
- Maximize construction in the Maintenance Yard, not at construction sites

E. Oil Absorbent Pad Distribution

Funded by a CalRecycle grant, the Department distributes recyclable absorbent bilge pads that boaters use to soak up oily bilges and prevent leaks while fueling. The number of pads distributed in FY '17 was consistent with the previous four years. Over 15 years, the Department has distributed a quarter-million pads.

Pads Distributed:

Year:	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
Pads:	15,000	18,000	20,000	17,000	14,400	14,000	17,500	17,500

Year:	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Pads:	21,000	17,000	15,000	15,000	15,000	15,000	15,000

F. Bird Protection

The Department tracks bird rescues and recoveries, which it coordinates with the Wildlife Care Network (WCN). Results in FY '17 show a continued decline in rescues as more forage fish returned to local waters compared to FY '15, when the number of sick or dead cormorants and common murrelets spiked due to a lack of

those fish in warming El Niño waters (source: WCN). That said, numbers of dead birds, especially in fall last year (calendar 2017, early FY '18), spiked among various species, especially grebes. Staff will report on this more fully in next year's Clean Marina Program presentation.

Bird Rescues and Recoveries:

Year:	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Birds:	29	81	115	38	268	24	32

G. Marine Mammal Rescues

The Department coordinates with the Channel Islands Marine Wildlife Institute (CIMWI) to rescue ailing marine mammals in the Harbor. In FY '17, rescues were below average for the past five years, in part due to the CIMWI's work, in which Harbor Patrol is often not involved. As it was for bird rescues in FY '15, when many adult pinnipeds abandoned their young during El Niño conditions, marine mammal rescues have been steadily down since then. Meanwhile, the Waterfront Department, in conjunction with CIMWI, has conducted a vigorous social-media outreach campaign, focused how to respond to injured animals. Find details on the Waterfront website at www.SantaBarbaraCA.gov/MarineMammals

Marine Mammal Rescues:

Year:	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Rescues:	43	49	45	97	51	33

4. Pollution Prevention and Abatement Projects

A. "Salad Boat"

Augmenting maintenance staff's routine efforts, a contractor working from docks and/ or a 13' skiff, removes litter and debris from the harbor on alternate Saturdays and following harbor events or storms. This improves the harbor's appearance, helps maintain a clean-ocean environment, and helps boaters access their slips. Items collected last year included candy wrappers, tennis balls, bottles, cans, cigarette butts, potato-chip bags, sticks, logs, and kelp. The number of dead birds collected (mostly cormorants, some grebes) was up from the previous year, while bird rescues were down. Extra work was required last February, following a storm that dumped 5 inches of rain in one day, sending kelp and storm-drain debris into the harbor.

West-facing docks and fingers (especially in Marina One—Area G on the attached map) continue to exhibit a "comb effect," catching debris as it exits the harbor, pushed by prevailing west wind and counter-clockwise ebb tides. This area was second only to an area near the small-boat launch ramp, where eddies and a lack

of current create a natural collection debris-capture point (Area C). (See map, Attachment 5, and year-end summary, Attachment 6).

B. Abandoned Watercraft Abatement (AWAF) and Vessel Turn-In (VTIP) Grants

While 10 boats went aground on East Beach during winter storms in January and February 2017 (in FY '18), the Department disposed of only one (a \$1,500 cost) during all of FY '17. The rest were disposed of by their owners—a dramatic shift in personal responsibility from years past.

The Department also disposed of 12 surrendered vessels in FY '17 (most ever for a single year), helping reduce numbers of derelict boats in the East Beach anchorage compared to historic averages. Meanwhile, after DBW combined its AWAF and VTIP grant programs into a Surrendered and Abandoned Vessel Exchange (SAVE) program, the Department applied for and received a \$70,000, two-year SAVE grant, good until October 2019.

Abandoned Boats:

Year:	FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13
Boats:	14	10	13	6	15	10	2	3
Year:	FY '14	FY '15	FY '16	FY '17				
Boats:	3	5	3	1				

Surrendered Boats:

Year:	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Boats:	10	2	1	9	3	8	12

C. Operation Clean Sweep

Operation Clean Sweep, a volunteer seafloor cleanup program, has removed 19.2 tons of debris from the harbor during 11 annual one-day events. Typical debris includes barbeques, bicycles, plastic barrels, boat propellers, cell phones, crab receivers, outboard engines and an occasional marine battery. This year's event (May 5th) will target Marina Two.

D. Cigarette Litter Prevention Program

As part of a Keep America Beautiful national effort and the City's new Smoke-free designation, the Waterfront Department applied for and received a \$2,500 grant to place 11+ cigarette receptacles throughout the Waterfront, including the harbor, Sea Landing, Stearns Wharf, and the Visitors' Center. These facilities will augment staff's outreach efforts to educate the public about the new City policy, which should help reduce the amount of cigarette litter in the harbor, some of which

comes down local watersheds during rainstorms, and some of which comes from harbor users themselves. “Smoke-Free-City” educational signage around the Waterfront will follow placement of the receptacles.

5. Education

Staff disseminates Clean Marina information via *Docklines* and *The Log* newspaper, as well as other local media outlets, including KEYT, *Santa Barbara News Press*, *Noozhawk* and City TV (channel 18). It also distributes literature from California Sea Grant, the California Ocean Protection Council, Cal Fish and Wildlife, the California Coastal Commission, DBW and the U.S. Coast Guard. The Department continues to expand its social-media presence, sharing Clean Marina information via Facebook, Instagram, and Twitter, as well as regular updates on its website, such as features on domoic acid, ocean impacts of discarded cigarettes, safe oil disposal, and events like Operation Clean Sweep. Harbor Patrol also educates boaters in the field, distributing pollution packets describing BMPs for clean boating and environmentally sound boat maintenance.

Other outreach efforts:

- Continued participation in UCSB’s Microbial Source Tracking project, to determine the source of watershed pollutants that end up in the ocean; and
- Updated “Fishermen’s Listserv” email group, used, for example, to alert fishermen to the timing of ice machine maintenance or low dissolved-oxygen levels in the harbor. Following an outreach effort, staff purged the Listserv of non-current emails, while adding several new fishermen to the list.

6. Compliance and Enforcement

A. Marine Sanitation Device (MSD) Inspections

Dye-tabling MSDs (“holding tanks”) is required for boats visiting Santa Barbara Harbor and for new slip and live-aboard assignments, to deter possible sewage discharges in the harbor. The number of MSD inspections in FY ’17 was 682, average for the past seven years, and up from FY ’16, when the logging of visitor check-ins was insufficient. This problem has since been corrected.

MSD Inspections:

Year:	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
Total:	1,230	1,280	1,199	1,259	1,370	1,160	992	837

Year:	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Total:	770	640	666	704	601	443	682

B. Discharge Violations

There were 9 known pollution violations in FY '17, about average for the past five years. All violations, ranging from small fuel or oil spills to sanding dust in the water, were addressed with warnings, not citations. This indicates that no violations were significant and that the ratio of warnings to citations continues to reflect the Department's emphasis on education as a primary enforcement tool, as well as boaters' general compliance with pollution-prevention laws.

Year:	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12
Total:	32	19	22	22	14	19	14	10
Warnings:	29	16	19	18	13	16	12	8
Citations:	3	3	3	4	1	3	2	2

Year:	FY '13	FY '14	FY '15	FY '16	FY '17
Total:	9	7	10	12	9
Warnings:	7	7	7	11	9
Citations:	2	0	3	0	0

COST SUMMARY, FY '17:

Storm Water Pollution Prevention Plan	\$9,980
Dry Season Water Quality Testing	\$2,400
** Salad Boat	\$23,800
* Oil-Absorbent Pads	\$4,500
* Abandoned Vessel/VTIP Disposal	\$37,640
Operation Clean Sweep	\$1,000
Replace Dockside Debris Nets	\$1,800
* Hazmat Turn-In & Disposal	\$7,860
* Used-Oil Disposal	\$4,480
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Total Annualized Program Cost:	\$97,960
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**FEMA Reimbursable Costs:	(\$17,130)
*Grant Reimbursed Costs:	(\$50,000)
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FY '17 Adjusted Clean Marina Program Cost:	\$30,830

ANNUAL CLEAN MARINA PROGRAM COSTS:

Year:	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
Total:	\$40,647	\$25,476	\$27,627	\$32,400	\$33,770	\$25,900	\$25,200	\$21,800

Year:	FY '11	FY '12	FY '13	FY '14	FY '15	FY '16	FY '17
Total:	\$21,500	\$35,100	\$38,000	\$58,300	\$32,000	\$31,400	\$30,830

CONCLUSION:

The Clean Marina Program contributes to the Department's overall mission, with annual costs remaining stable. The Program highlights the importance of maintaining a clean ocean environment for those who visit, recreate or work in Santa Barbara Harbor, as well as the marine and avian life that depend on it to thrive.

Attachments: 1. Water Quality Sampling Results—Harbor
2. Water Quality Sampling Map—Harbor
3. Dissolved Oxygen Sampling Results—Harbor
4. Green Business Certification Letter
5. Salad Boat Debris Cleanup Map
6. Salad Boat Annual Report

Prepared by: Mick Kronman, Harbor Operations Manager

**SANTA BARBARA HARBOR
WATER QUALITY TEST RESULTS
2017**

Harbor Commission Meeting April 19, 2018 Report #7 Attachment #1, page 1/2

Total Coliform MPN/100mls						
Station	April	May	June	July	August	September
SBH #7	74	31	52	313	10	158
SBH #8	97	2014	413	135	259	1439
SBH #9	63	63	98	188	231	324
SBH #10	63	20	41	90	31	112
SBH #11	275	160	278	358	250	476
SBH #12	74	20	20	81	52	144
SBH #13	63	<10	<10	<10	<10	203
Limit: <10,000 MPN/100mls						

Fecal Coliform MPN/100mls						
Station	April	May	June	July	August	September
SBH #7	10	10	<10	233	<10	40
SBH #8	<10	98	<10	50	<10	10
SBH #9	<10	10	<10	<10	122	63
SBH #10	20	20	<10	<10	<10	10
SBH #11	10	41	10	153	20	41
SBH #12	10	<10	10	20	20	41
SBH #13	20	<10	<10	<10	<10	<10
Limit: < 400 MPN/100mls						

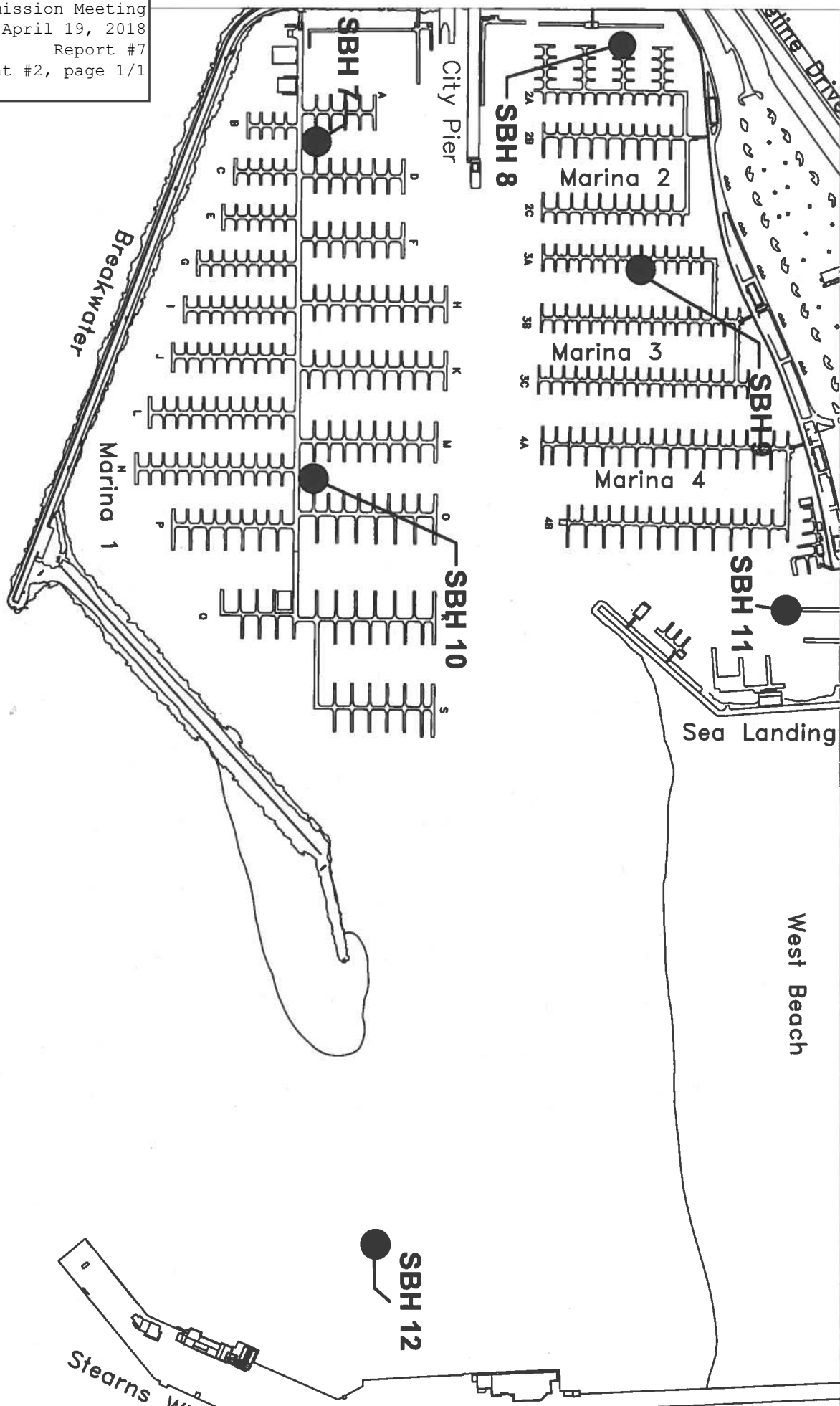
Enterococcus MPN/100mls						
Station	April	May	June	July	August	September
SBH #7	10	<10	<10	10	<10	<10
SBH #8	<10	<10	<10	10	<10	41
SBH #9	<10	<10	<10	<10	52	10
SBH #10	<10	<10	<10	<10	<10	<10
SBH #11	<10	158	<10	<10	<10	31
SBH #12	<10	<10	<10	<10	<10	<10
SBH #13	<10	<10	<10	<10	<10	<10
Limit: < 104 MPN/100mls						

**SANTA BARBARA HARBOR
WATER QUALITY TEST RESULTS
2017**

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MBAS MPN/l			
Station	April	June	August
SBH #7	ND	ND	ND
SBH #8	ND	ND	ND
SBH #9	ND	ND	ND
SBH #10	ND	ND	ND
SBH #11	ND	ND	ND
SBH #12	ND	ND	ND
SBH #13	ND	ND	ND
Limit: < .2 MPN mg/l			

Water Quality Sampling Locations



SBH 13

Dissolved Oxygen Levels in the Harbor

1/10/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	1.49 mg/l	5.32 mg/l
Station #8	Marina 2B300	1.63 mg/l	1.93 mg/l
Station #9	Marina 3A030	1.50 mg/l	2.04 mg/l
Station #10	Marina 1M001	1.23 mg/l	3.28 mg/l
Station #11	West Finger of Launch Ramp	1.40 mg/l	1.89 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	4.87 mg/l	5.10 mg/l
Station #13	Control, 100 yards Offshore	6.70 mg/l	7.65 mg/l

2/15/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	6.26 mg/l	6.27 mg/l
Station #8	Marina 2B300	5.62 mg/l	5.42 mg/l
Station #9	Marina 3A030	5.90 mg/l	6.14 mg/l
Station #10	Marina 1M001	6.45 mg/l	5.88 mg/l
Station #11	West Finger of Launch Ramp	5.13 mg/l	5.08 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.87 mg/l	7.06 mg/l
Station #13	Control, 100 yards Offshore	8.77 mg/l	8.77 mg/l

4/5/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.72 mg/l	5.45 mg/l
Station #8	Marina 2B300	5.33 mg/l	5.64 mg/l
Station #9	Marina 3A030	6.32 mg/l	6.55 mg/l
Station #10	Marina 1M001	5.78 mg/l	6.11 mg/l
Station #11	West Finger of Launch Ramp	6.03 mg/l	5.98 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.65 mg/l	7.62 mg/l
Station #13	Control, 100 yards Offshore	8.63 mg/l	8.56 mg/l

5/30/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	7.35 mg/l	6.40 mg/l
Station #8	Marina 2B300	7.03 mg/l	6.85 mg/l
Station #9	Marina 3A030	7.21 mg/l	6.40 mg/l
Station #10	Marina 1M001	7.31 mg/l	6.70 mg/l
Station #11	West Finger of Launch Ramp	6.42 mg/l	6.35 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.45 mg/l	8.51 mg/l
Station #13	Control, 100 yards Offshore	9.56 mg/l	10.33 mg/l

6/13/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	NA	NA
Station #8	Marina 2B300	NA	NA
Station #9	Marina 3A030	6.74 mg/l	NA
Station #10	Marina 1M001	5.51 mg/l	6.15 mg/l
Station #11	West Finger of Launch Ramp	5.80 mg/l	5.84 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	6.90 mg/l	7.41 mg/l
Station #13	Control, 100 yards Offshore	8.33 mg/l	8.40 mg/l

8/8/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	6.09 mg/l	4.77 mg/l
Station #8	Marina 2B300	6.06 mg/l	6.34 mg/l
Station #9	Marina 3A030	6.09 mg/l	6.19 mg/l
Station #10	Marina 1M001	6.55 mg/l	5.65 mg/l
Station #11	West Finger of Launch Ramp	5.45 mg/l	5.53 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.37 mg/l	7.68 mg/l
Station #13	Control, 100 yards Offshore	9.05 mg/l	9.15 mg/l

Dissolved Oxygen Levels in the Harbor

8/23/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	6.26 mg/l	5.85 mg/l
Station #8	Marina 2B300	5.63 mg/l	5.43 mg/l
Station #9	Marina 3A030	6.21 mg/l	6.27 mg/l
Station #10	Marina 1M001	6.37 mg/l	5.72 mg/l
Station #11	West Finger of Launch Ramp	5.51 mg/l	4.21 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	6.42 mg/l	6.99 mg/l
Station #13	Control, 100 yards Offshore	8.05 mg/l	7.93 mg/l

9/7/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	6.40 mg/l	6.19 mg/l
Station #8	Marina 2B300	6.80 mg/l	4.92 mg/l
Station #9	Marina 3A030	6.52 mg/l	6.95 mg/l
Station #10	Marina 1M001	6.31 mg/l	6.71 mg/l
Station #11	West Finger of Launch Ramp	5.83 mg/l	5.07 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.39 mg/l	7.86 mg/l
Station #13	Control, 100 yards Offshore	8.34 mg/l	8.48 mg/l

9/19/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.88 mg/l	6.88 mg/l
Station #8	Marina 2B300	6.60 mg/l	6.38 mg/l
Station #9	Marina 3A030	6.33 mg/l	6.22 mg/l
Station #10	Marina 1M001	6.55 mg/l	7.10 mg/l
Station #11	West Finger of Launch Ramp	5.77 mg/l	5.03 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.34 mg/l	7.41 mg/l
Station #13	Control, 100 yards Offshore	8.16 mg/l	8.11 mg/l

10/18/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.66 mg/l	4.81 mg/l
Station #8	Marina 2B300	5.35 mg/l	4.42 mg/l
Station #9	Marina 3A030	5.34 mg/l	5.13 mg/l
Station #10	Marina 1M001	5.20 mg/l	5.54 mg/l
Station #11	West Finger of Launch Ramp	4.68 mg/l	4.18 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.43 mg/l	7.36 mg/l
Station #13	Control, 100 yards Offshore	7.86 mg/l	7.90 mg/l

11/28/2017

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.50 mg/l	5.96 mg/l
Station #8	Marina 2B300	5.30 mg/l	5.30 mg/l
Station #9	Marina 3A030	5.55 mg/l	6.70 mg/l
Station #10	Marina 1M001	5.65 mg/l	6.46 mg/l
Station #11	West Finger of Launch Ramp	5.27 mg/l	4.60 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.02 mg/l	6.94 mg/l
Station #13	Control, 100 yards Offshore	8.69 mg/l	8.63 mg/l

1/18/2018

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.80 mg/l	5.34 mg/l
Station #8	Marina 2B300	5.33 mg/l	5.32 mg/l
Station #9	Marina 3A030	5.59 mg/l	6.40 mg/l
Station #10	Marina 1M001	5.56 mg/l	6.35 mg/l
Station #11	West Finger of Launch Ramp	5.81 mg/l	5.30 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.17 mg/l	7.36 mg/l
Station #13	Control, 100 yards Offshore	8.01 mg/l	7.63 mg/l

Environmentally Preferable Purchasing

We shall purchase/use the following:

- Remanufactured and refillable toner cartridges.
- Office & toilet paper with 100% recycled content (50% minimum).
- Products with the least packaging (no plastic, polystyrene or aerosol packaging).
- Recycled content-containing office furniture and supplies.
- Refillable bottles, canvas bags and reusable to-go containers.
- LED lighting and Energy Star appliances and electronics when replaced.
- Water efficient toilets, showerheads and faucet aerators.

Conserve Fossil Fuels

We shall conserve fossil fuels by:

- Encouraging the use of public transit.
- Promoting biking to work and carpooling.
- Offering telecommuting options.
- Employing the use of electric work vehicles.
- Provide Electric Car Charging stations in the Waterfront.

We shall strive to build and remodel using LEED green building standards.

Employee Education

We shall educate employees on resource conservation and pollution prevention through:

- Ensuring that little to no waste is generated during work parties, picnics, meetings. Ask caterers to use reusable everything, buy reusable trays, etc.
- Training programs or brown bag sessions to educate employees on proper recycling & composting practices, resource conservation ideas, importance of low-toxic purchasing etc.
- Informing staff of environmental issues in company emails, training materials, staff meetings.

Environmental Stewardship

Through the course of our work, we shall endeavor to promote these policies to other companies, organizations and individuals.

Respectfully,



Scott Riedman
Waterfront Director