

# Harbor Safety Committee

of the San Francisco Bay Region

*Mandated by the California Oil Spill  
Prevention and Response Act of 1990*

## Harbor Safety Committee of the San Francisco Bay Region

Thursday, March 14, 2019

Port of Oakland, Exhibit Room

530 Water Street, Oakland, CA

Capt. Lynn Korwatch (M), Marine Exchange of the San Francisco Bay Region (Marine Exchange), Chair of the Harbor Safety Committee (HSC); called the meeting to order at 10:00.

Marcus Freeling (A), Marine Exchange, confirmed the presence of a quorum of the HSC.

Committee members (M) and alternates (A) in attendance with a vote: **Jim Anderson** (M), CA Dungeness Crab Task Force; **Tom Anderson** (A), San Francisco Marina; **Capt. Bob Carr** (M), San Francisco Bar Pilots; **Capt. Tony Ceraolo** (M), United States Coast Guard; **Capt. Sean Daggett** (M), Sause Bros. Inc.; **Ben Eichenberg** (A), San Francisco Baykeeper; **Jeff Ferguson** (M), NOAA; **Aaron Golbus** (M), Port of San Francisco; **Troy Hosmer** (M), Port of Oakland; **Capt. Thomas Kirsch** (M), Blue and Gold Fleet; **Tammie Lasiter** (A), SSA Terminals; **Jim McGrath** (M), Bay Conservation and Development Commission; **Capt. Ryan McKenney** (A), Chevron Shipping Company; **Lt.Col. Travis Rayfield** (M), US Army Corps of Engineers; **Jeff Robbins** (M), General Steamship Corporation; **Julian Rose** (M), Marathon Petroleum; **Jeff Vine** (M), Port of Stockton.

The meetings are always open to the public.

### Approval of the Minutes-

A motion to accept the minutes of the February 14, 2019 meeting was made and seconded. The minutes were approved without dissent.

### Comments by Chair- Capt. Lynn Korwatch

Welcomed the committee members and audience.

### Coast Guard Report- Capt. Tony Ceraolo

- Advised of the recent commissioning ceremony for USCG Cutter Robert Ward. The new vessel brings enhanced enforcement capabilities and will be based in Los Angeles.
- Advised that VTS will be updating Ports and Waterways Safety in late March and services may be temporarily limited.

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- Advised of recent high winds which caused several incidents. On February 21<sup>st</sup> a vessel dragged anchor in Anchorage 9 resulting in a close call with another vessel. The pilot onboard a nearby ship diverted and released an escort tug to assist.
- Advised that this will be his last HSC meeting before Change of Command and thanked the maritime community for their support and cooperation. Capt. Marie Byrd will be assuming command of Sector San Francisco. Capt. Korwatch thanked Capt. Ceraolo for his service.
- LCDR Rebecca Deakin read from the February- 2019 Prevention/Response Report (attached).

### **Army Corps of Engineers Report- Lt.Col. Travis Rayfield**

- Advised of Mississippi River flooding. National assets have been deployed to the region which may impact dredge availability in the bay.
- Read from the US Army Corps of Engineers, San Francisco District Report (attached). The Main Ship Channel is scheduled for dredging in June by hopper dredge Essayons. Upland placement of dredge material from Redwood City dredging has been approved. The Dillard is still out for maintenance but should be back soon.
- Jim Mazza, USACE, advised that the most recent Pinole Shoal survey has been posted.
- Julian Rose advised that there are still concerns regarding Pinole Shoal Channel depth and the shoaling trend in the channel.

### **Clearinghouse Report- Marcus Freeling (report attached)**

### **OSPR Report- Mike Zamora (Nothing to Report)**

- Tom Cullen, OSPR Administrator, thanked Capt. Ceraolo for his service.

### **NOAA Report- Jeff Ferguson**

- Advised that the CATZOC issue concerning Pinole Shoal Channel is being addressed by NOAA.
- Brian Garcia, NWS, advised that a little more rain is expected this winter but conditions are starting to dry out. Jim McGrath asked about storm surge damage in the bay this winter. Brian Garcia advised that surges were reported which in addition to warmer water temperatures, contributed to higher water levels seen in the bay. This will be considered an El Nino year.

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## **State Lands Commission Report- Richard Hernandez (report attached)**

### **Report on CARB's At Berth Regulation- Angela Csondes, CARB**

- Angela Csondes, CARB, gave a presentation to the committee on the At Berth Regulation (slides attached). The regulation seeks to reduce NOx emissions while a vessel is in port by requiring shore power or emission scrubber systems. The regulation currently covers container ships and cruise lines but tankers and Ro/Ro vessels are to be included in the future. For terminals and vessels lacking shore power capability, land-based and barge-based scrubber systems have been developed that fit over a vessel's stack while docked. Testing of emissions control systems is ongoing. The engagement and participation of the maritime community is welcome. Channel clearance concerns have been voiced regarding barge-based systems which are positioned alongside ships in port. The regulation specifies a three-hour window for a vessel to connect to shore power upon arrival. There have been issues with the three-hour rule and revision is being considered. Extending the regulation to cover tankers and Ro/Ro vessels is a priority. Projected emission reduction resulting from the regulation is significant. Particulate and CO2 emissions are also reduced by the regulation. Tanker emission control is particularly challenging and work with industry to develop strategies continues. Recent meetings with industry have taken place and a public workshop will be held in May, 2019. The board hearing date for proposed rulemaking is December 5, 2019.
- Justin Taschek asked about specific updates to the three-hour rule definition. Angela Csondes advised that revising the rule definition to use last line instead of first line time is proposed. Richard Hernandez advised of several concerns with the regulation that have been expressed.

### **Report of Ferry Routing Protocol 2.0 – Streamlining VTS Reporting- Scott Humphrey, USCG VTS**

- Scott Humphrey, USCG VTS, advised that VTS is updating the process of reporting vessel sailing plans. Reports are currently made manually by radio which is time consuming for VTS. Minimum wake requests are often made as well. With increasing numbers of ferry vessels in the bay all checking in before transit, the VTS system is under stress. The current process is outdated now that vessels have AIS and other electronic communication capabilities. Electronic VTS reporting is being proposed. Safety and security are priorities. The Ferry Operations Work Group will be meeting on March 27<sup>th</sup> to address the issue.

# Harbor Safety Committee

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## **Sail GP Report – Robbie Dean, Sail GP**

- Robbie Dean, Sail GP, gave a presentation to the committee on Sail GP which is scheduled to take place in San Francisco on May 4-5 (slides attached). San Francisco will be the second stop on the Sail GP tour after Sydney, Australia. A one-million dollar prize goes to the winner. A city front racecourse will be used as described at previous HSC meetings. Inflatable stake marks will outline the race box. Enforcement, support and medical boats will be on scene and flying official flags. Vessels that need to pass through the race box will be escorted through between races when feasible. Practice days will be held on April 30<sup>th</sup> and May 3<sup>rd</sup>. About 300 spectator vessels have registered to view the race which will also be televised live.
- LCDR Deakin advised that a Notice of Proposed Rulemaking concerning Sail GP is expected to be published soon. Jim McGrath advised of recreational boating issues and concerns about restriction to public access. Jillian Luchsinger, Sail GP, advised that BCDC has been consulted and the races will end by 2pm to ensure recreational access. Robbie Dean advised that a tabletop exercise will be held in preparation for the event. The Sail GP technical base will be set up in Alameda where racing vessels will moor overnight. Six sailboats are participating in the race and will be towed through the Oakland estuary on their way to and from the racecourse. Capt. Korwatch asked if the race box stake marks will have AIS transponders. LCDR Deakin advised that they won't but AIS is being considered for future races.

## **Work Group Reports-**

**Tug Work Group-** Capt. Sean Daggett advised that there was nothing to report.

**Navigation Work Group-** Capt. Bob Carr advised of a Work Group meeting scheduled on March 21<sup>st</sup>. Harbor Safety Plan CMA's will be reviewed in addition to a proposal to use virtual AIS notifications to inform mariners about NOAA's voluntary vessel speed reduction program put in place to protect whales from ship strikes. Updated Bar Pilot tide books are available.

**Ferry Operations Work Group-** Capt. Thomas Kirsch advised that a Work Group meeting has been scheduled on March 27<sup>th</sup> to address ferry radio traffic congestion issues and electronic VTS reporting. VTS will be in attendance.

**Dredge Issues Work Group-** Julian Rose advised that updated recommendations for Pinole Shoal dredging have been made. Additionally, the placement of a tide gauge near Pinole Shoal is being considered. An informal Work Group meeting will take place after today's HSC meeting with CeNCOOS to discuss details. Updating the CATZOC rating for Pinole Shoal will help address under-keel clearance

# Harbor Safety Committee

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issues. Capt. Korwatch advised that CeNCOOS is scheduled to give a presentation at the April HSC meeting.

**PORTS Work Group-** Troy Hosmer advised that there was nothing to report.

**Prevention through People Work Group-** Nothing to report.

## **PORTS Report- Marcus Freeling**

- Advised that PORTS IP modem upgrades are almost complete.
- Advised that equipment associated with the Pier 17 visibility sensor will need to be rearranged due to a conflict with USGS equipment at the location.
- Advised that the bi-annual service of the three PORTS buoy mounted current sensors will take place in April.
- Advised that PORTS data is publicly available through NOAA's Tides and Currents website.

## **Public Comment-**

- Denis Deisinger, BAE Systems, introduced Alex Kryska of Prop SF, a commuter ferry company based in Emeryville.
- Mike Jacob, PMSA, advised of significant concerns with the Oakland A's stadium proposal that have not been publicly addressed. The EIR process has not been transparent and navigational safety is a primary issue. Capt. Korwatch advised that many have expressed concerns with the ballpark proposal. Mike Jacob advised that an environmental review is being conducted and an application has been submitted to BCDC requesting changes to the Seaport Plan in order to accommodate the project. Jim McGrath advised that BCDC will be meeting in June to consider the proposal and will provide more information when available. Jurisdiction is an issue.
- An ILWU representative advised that the Oakland A's ballpark proposal is a threat to the Port of Oakland, waterway safety and the maritime industry. Effects on the turning basin, jobs and trucking are primary concerns. The ILWU is organizing opposition to the project and welcomes support from the maritime community. Other comments were made critical of the A's stadium project.
- Henry Ruhl, CeNCOOS, introduced his organization to the committee. CeNCOOS partners with NOAA to fund marine assets including hi-frequency radar measuring surface currents, salinity

# Harbor Safety Committee

of the San Francisco Bay Region

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sensors and tide gauges. Ocean modeling and trajectory analysis are priorities. A tide gauge is being considered in Pinole Shoal to support navigational safety.

- It was announced that the Cal Maritime Women in Maritime Leadership Conference is this weekend.

## **Old Business- None**

## **New Business-**

- Capt. Korwatch announced that the Marine Exchange will be moving to a new office on May 1<sup>st</sup>. The recently purchased office is located in the Watergate development in Emeryville. The Marine Exchange is celebrating its 170-year anniversary this year.

## **Next Meeting-**

1000-1200, April 11, 2019  
California Maritime Academy, Richmond Maritime Safety & Security Center  
756 West Gertrude Street, Richmond, CA

## **Adjournment-**

A motion to adjourn was made and seconded. The motion passed without dissent and the meeting adjourned at 11:45.

Respectfully submitted:



Capt. Lynn Korwatch

<b>PREVENTION / RESPONSE - SAN FRANCISCO HARBOR SAFETY STATISTICS</b>			
<b>February 2019</b>			
<b>PORT SAFETY CATEGORIES*</b>	<b>Feb-2019</b>	<b>Feb-2018</b>	<b>**3yr Avg</b>
<b>Total Number of Port State Control Detentions:</b>	<b>2</b>	<b>0</b>	<b>0.33</b>
SOLAS (0), STCW (0), MARPOL (1), ISM (1), ISPS (0)			
<b>Total Number of COTP Orders:</b>	<b>11</b>	<b>4</b>	<b>3.36</b>
Navigation Safety (5), Port Safety & Security (6), ANOA (0)			
<b>Marine Casualties (reportable CG 2692) within SF Bay:</b>	<b>10</b>	<b>10</b>	<b>9.44</b>
Allision (0), Collision (0), Fire (1), Capsize (0), Grounding (0), Sinking (0)			
Steering (0), Propulsion (5), Personnel (3), Other (1), Power (0)			
<b>Total Number of (routine) Navigation Safety issues/Letters of Deviation:</b>	<b>5</b>	<b>1</b>	<b>1.89</b>
Radar (3), Gyro (0), Steering (0), Echo Sounder (1), AIS (0)			
ARPA (0), Speed Log (0), R.C. (0), Other (1)			
<b>Reported or Verified "Rule 9" or other Navigational Rule Violations:</b>	<b>0</b>	<b>1</b>	<b>0.42</b>
<b>Significant Waterway events/Navigation related Cases:</b>	<b>0</b>	<b>0</b>	<b>0.31</b>
<b>Total Port Safety (PS) Cases opened</b>	<b>28</b>	<b>16</b>	<b>15.75</b>
<b>MARINE POLLUTION RESPONSE</b>			
<b>Pollution Discharge Sources (Vessels)</b>	<b>Feb-2019</b>	<b>Feb-2018</b>	<b>**3yr Avg</b>
U.S. Commercial Vessels	3	1	0.75
Foreign Freight Vessels	1	0	0.08
Public Vessels	3	0	0.61
Commercial Fishing Vessels	2	0	0.47
Recreational Vessels	6	4	3.42
<b>Pollution Discharge Sources (Facilities)</b>			
Regulated Waterfront Facilities	2	0	0.28
Regulated Waterfront Facilities - Fuel Transfer	0	0	0.00
Other Land Sources	10	0	2.06
Mystery Spills - Unknown Sources	3	3	4.31
<b>Number of Pollution Incidents within San Francisco Bay</b>			
Spills < 10 gallons	8	2	4.19
Spills 10 - 100 gallons	2	0	0.97
Spills 100 - 1000 gallons	1	0	0.14
Spills > 1000 gallons	0	0	0.00
Spills - Unknown Size	19	6	6.64
<b>Total Pollution Incidents</b>	<b>30</b>	<b>8</b>	<b>11.94</b>
<b>Oil Discharge/Hazardous Materials Release Volumes by Spill Size</b>			
Estimated spill amount from U.S. Commercial Vessels	352.00	0.25	17.02
Estimated spill amount from Foreign Freight Vessels	0.00	0.00	0.14
Estimated spill amount from Public Vessels	16.00	0.00	2.84
Estimated spill amount from Commercial Fishing Vessels	6.00	0.00	7.51
Estimated spill amount from Recreational Vessels	2.00	5.00	23.02
Estimated spill amount from Regulated Waterfront Facilities	40.00	0.00	1.53
Estimated spill amount from Regulated Waterfront Facilities - Fuel Transfer	0.00	0.00	0.00
Estimated spill amount from Other Land Sources	7.00	0.00	11.31
Estimated spill amount from Unknown Sources (Mystery Sheens)	unk	unk	0.00
<b>Total Oil Discharge and/or Hazardous Materials Release (Gallons)</b>	<b>423.00</b>	<b>5.25</b>	<b>63.37</b>
<b>Penalty Actions</b>			
Civil Penalty Cases	0	0	0.00
Notice of Violations	1	0	0.25
Letters of Warning	3	2	2.39
<b>Total Penalty Actions</b>	<b>4</b>	<b>2</b>	<b>2.64</b>
* NOTE: Values represent all cases within the HSC jurisdiction during the period. Significant cases are detailed in the narrative.			
** NOTE: Values represent an average month over a 36 month period for the specified category of information.			

<b>SIGNIFICANT PORT SAFETY AND SECURITY CASES (FEB 2019)</b>
<b>MARINE CASUALTIES</b>
Loss of propulsion (04FEB19): A foreign flag tank vessel experienced a reduction in propulsion while transiting to Anchorage 9. The causative factor was attributed to a malfunctioning exhaust valve actuator in the No. 1 cylinder and the vessel's crew effected permanent repair. Class attended the vessel and witnessed satisfactory operation of the vessel's propulsion system. Coast Guard received and reviewed the Class report. Case closed.
Loss of propulsion (05FEB19): A foreign flag tank vessel failed to respond to an astern bell while approaching Anchorage 9. The causative factor was attributed to a malfunctioning fuel oil pressure regulating valve. A technician effected permanent repair. Class attended the vessel and witnessed satisfactory operation of the vessel's propulsion system. Coast Guard received and reviewed the Class report. Case closed.
Loss of propulsion (17FEB19): A foreign flag tank vessel experienced a loss of propulsion while approaching the pier at the Port of Richmond. The causative factor was attributed to a pressure gauge error. The vessel's crew effected permanent repair. Class attended the vessel and witnessed satisfactory operation of the vessel's propulsion system. Coast Guard received and reviewed the Class report. Case closed.
Loss of propulsion (21FEB19): A foreign flag tank vessel experienced a loss of propulsion while approaching Anchorage 9. The causative factor was excessive wearing and leaking from all six fuel injection pumps. The vessel's crew effected permanent repair. Class attended the vessel and witnessed satisfactory operation of the vessel's propulsion system. Coast Guard received and reviewed the Class report. Case closed.
Loss of propulsion (24FEB19): A foreign flag container vessel experienced a reduction in propulsion while approaching Anchorage 9. The causative factor was an inoperable cylinder on the vessel's engine. A technician effected permanent repair. A Class Surveyor and Coast Guard attended the vessel and witnessed satisfactory operation of the vessel's propulsion system. Case closed.
Loss of propulsion (28FEB19): A foreign flag bulk freight vessel experienced a loss in propulsion while transiting to the Port of Richmond. The causative factor was a malfunction in the air start valve. The vessel's crew effected permanent repair. Class and Coast Guard attended the vessel and witnessed satisfactory operation of the vessel's propulsion system. Case closed.
<b>VESSEL SAFETY CONDITIONS (CID)</b>
Operational Control, (08FEB19): A foreign flag bulk freight vessel was issued an amended Captain of the Port Order requiring a continuous one tug escort within the San Francisco Bay upon arrival and departure at Mile Rock. The vessel is also required to provide an analysis of the vessel's steering gear hydraulic oil every 30 calendar days. Case closed.
Vessel Detention, (21FEB19-7MAR19): A US flag RO/RO container vessel reported sheening while pier side in Oakland, CA. Divers identified the cause of the sheen to be a 10" fracture on the hull 15' below the waterline. The company was required to conduct an engineering analysis and submit a repair proposal. The engineering analysis was examined/accepted and the repair proposal was approved by Class/USCG. Repairs and final testing of welds was accomplished on March 7, 2019 and the detention was lifted. Case closed.
Vessel Detention (12FEB19-26FEB19): A foreign flag tank vessel was inspected in Richmond CA and detained due to an inoperable Oily Water Separator (OWS), unaccounted oil waste in the Oil Record Book, and insufficient engine crew familiarization/training with the OWS. Class and Coast Guard verified that a new OWS was installed and is working properly. The engine crewmembers received an adequate amount of familiarization/training to operate the OWS. Class conducted an external audit. The detention was lifted. Case closed.
<b>NAVIGATIONAL SAFETY</b>
Letter of Deviation, S-Band Radar (06FEB19): Vessel was issued an outbound LOD due to an inoperable S-band radar. A technician attended the vessel while at anchorage and effected repairs. Coast Guard reviewed and approved final report. Case closed.
Letter of Deviation, Echo Depth Sounding Device/Recorder (09FEB19): Vessel was issued an inbound LOD due to an inoperable Echo Depth Sounding Device. A technician attended the vessel and effected repairs. Coast Guard reviewed and approved final report. Case closed.
Letter of Deviation, S-Band Radar (11FEB19): Vessel was issued an inbound LOD due to an inoperable S-band radar. A technician attended the vessel and effected repairs. Coast Guard reviewed and approved final report. Case closed.
Letter of Deviation, (AIS) Pilot Plug (16FEB19): Vessel was issued an inbound LOD due to an inoperable AIS Pilot Plug. A technician attended the vessel and effected repairs. Coast Guard reviewed and approved final report. Case closed.
Letter of Deviation, X-Band Radar (19FEB19): Vessel was issued an inbound LOD due to an inoperable X-Band Radar. A technician attended the vessel and effected repairs. Coast Guard reviewed and approved final report. Case closed.
<b>SIGNIFICANT INCIDENT MANAGEMENT DIVISION CASES</b>
Letter of Warning (09FEB19): A fishing vessel discharged approximately 5 gallons of diesel into Monterey Harbor due to a leak in the fuel lines. The bilge pump activated resulting in the oily bilge discharging and causing a sheen. The fuel line was fixed and the bilge was cleaned out. No further pollution impacts. Case closed.
Letter of Warning (21FEB19): A sheen was reported coming from a commercial vessel in Oakland Harbor. Divers discovered a 10' fracture in the hull on the starboard side that correlated to the path of discharge. The tanks were emptied via internal transfer and the cracked hull was repaired. No further pollution impacts. Case closed.
Letter of Warning (27FEB19): A vessel caught fire, became partially submerged in the Vallejo Municipal Marina, and discharged diesel into the water. The marina hired a salvage company to remove the vessel. The vessel was removed and there were no further pollution impacts. Case closed.
Notice of Violation (27FEB19): 40 gallons of palm oil spilled into the San Joaquin River from a facility conducting an offload. The spill was caused by a pressure relief valve becoming over pressurized. The facility followed their emergency procedures to secure the source and conduct clean ups. No further pollution impacts. Case closed.
Letter of Warning (27FEB19): A small passenger vessel broke free from its mooring and ran aground near Noyo Headlands Park. A salvage company was hired to remove the fuel and another salvage company was hired to remove the boat from the beach. No further pollution impacts. Case closed.

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**Report of the  
U.S. Army Corps of Engineers, San Francisco District  
March 14, 2019**

**1. CORPS O&M DREDGING PROGRAM**

The following report covers the planned FY 2019 dredging program for San Francisco Bay. While this program is subject to change based on a number of variables, it is based on actual FY 19 appropriations including the FY 2019 Work Plan. Please refer to the Local Notice to Mariners for details of dredge operations.

**FY 2019 DREDGING**

- a. **SF Main Ship Channel** – FY 19 dredging is being planned with expected work to be completed in June by the Essayons.
- b. **Richmond Inner Harbor** – FY19 planning for the Richmond Inner is underway with expected award in **April of 2019**.
- c. **Richmond Outer Harbor (and Richmond Long Wharf)** –In alignment with last year’s proposal to alternate Hopper dredging between Pinole Shoals and Richmond Outer, dredging for Richmond Outer dredging was conducted with the Essayons and completed in November 2018. Richmond Outer is expected to be deferred in FY19.
- d. **Oakland Harbor** – The 2018 dredge cycle **has been completed with contract closeout activities underway**. The FY 19 Dredging contract is being accelerated to allow for additional placement time. Award is being planned for May but will require significant coordination with resource agencies to execute on that schedule.
- e. **Redwood City Harbor** – The 2019 dredging contract is being planned for award in **May**. In partnership with the Coastal Conservancy upland placement is being evaluated. **Confirmatory sediment testing and analysis for suitability of planned placement location is ongoing. Memorandum of Agreement to allow for contributed funds is under review.**
- f. **San Pablo Bay (Pinole Shoal)** –In alignment with last year’s proposal to alternate Gov’t Hopper dredging Pinole will be dredged in 2019. Action is planned for June.
- g. **Suisun Bay Channel (and New York Slough)** – 2019 Clamshell award is being planned for July.

**2. DEBRIS REMOVAL** – Debris removal for February 2019 was 90 tons. Raccoon: 40 tons; other boats: 50 tons, including 9 abandoned vessels. Average for February from 2009 to 2018 is 80.6 tons (Range: 12-198 tons).

**BASEYARD DEBRIS COLLECTION TOTALS:**

<b>MONTH</b>	<b>RACCOON</b>	<b>DILLARD</b>	<b>MISC</b>	<b>TOTAL</b>
2019	TONS	TONS	TONS	TONS
JAN	55	0	78	133
FEB	40	0	50	90
MAR	0	0	0	0
APR	0	0	0	0
MAY	0	0	0	0
JUN	0	0	0	0
JUL	0	0	0	0
AUG	0	0	0	0
SEP	0	0	0	0
OCT	0	0	0	0
NOV	0	0	0	0
DEC	0	0	0	0

<b>YR TOTAL</b>
223

**3. UNDERWAY OR UPCOMING HARBOR IMPROVEMENTS**

None to report.

**4. EMERGENCY (URGENT & COMPELLING) DREDGING**

None to report.

## 5. OTHER WORK

**San Francisco Bay to Stockton** – The study is now being conducted by the Wilmington District to more efficiently match the study with available resources. The Tentatively Selected Plan (TSP) milestone for Phase I (Western Reach) of the project was held on 29 June 2016 with a recommended plan to deepen the Phase I reach of the project from a depth of -35 feet to -38 feet MLLW. The Draft report is being scheduled for public release in April of 2019.

## HYDROGRAPHIC SURVEY UPDATE

Address of Corps' web site for completed hydrographic surveys:

<http://www.spn.usace.army.mil/Missions/Surveys,StudiesStrategy/HydroSurvey.aspx>

The following surveys are posted:

**Alameda Point Navigation Channel:** Condition survey of May 23, 2018.  
**Berkeley Marina (Entrance Channel):** Condition survey of July 9, 2018.  
**Islais Creek Channel:** Condition survey of July 17, 2018.  
**Larkspur Ferry Channel:** Condition survey of July 9, 2018.  
**Main Ship Channel:** Condition survey of April 5, 2018.  
**Mare Island Strait:** Condition survey of July 10, 2018.  
**Marinship Channel (Richardson Bay):** Condition survey of December 7, 2017.  
**Napa River:** Condition survey of May 9-10, 2018.  
**Northship Channel:** Condition survey of June 29, 2018.  
**Oakland Entrance Channel (Reach 1):** Post-dredge survey of January 28, 2019.  
**Oakland Inner Harbor (Reach 3):** Post-dredge survey January 22, 2019.  
**Oakland Inner Harbor (Reach 4-6):** Post-dredge survey of December 10-12, 2018.  
**Oakland Outer Harbor (Reach 7-8):** Post-dredge survey of October 5, 9, 22 & 26, 2018.  
**Petaluma River (Across-the-Flats):** Condition survey of December 19, 2017.  
**Petaluma River (Main Channel):** Condition survey of December 12-13, 2017.  
**Petaluma River (Extended Channel):** Condition survey of March 19-26, 2018.  
**Pinole Shoal Channel:** Condition survey of February 6-7, 12 & 21, 2019.  
**Redwood City Harbor:** Condition survey of February 7-8, 2018.  
**Richmond Inner Harbor:** Condition survey of February 26, 2019.  
**Richmond Inner Harbor (Santa Fe Channel):** Condition survey of December 20, 2016.  
**Richmond Outer Harbor (Longwharf):** Post-dredge survey of October 23, 2018.  
**Richmond Outer Harbor (Southampton Shoal):** Post-dredge survey of October 26, 2018.  
**Sacramento River Deep Water Ship Channel:** Condition survey of January 16-21, 2019.  
**San Bruno Shoal:** Condition survey of July 11, 2018.  
**San Leandro Marina (and Channel):** Condition survey of March 30 and April 1, 2015.  
**San Rafael (Across-the-Flats):** Condition survey of September 24, 2018.  
**San Rafael (Creek):** Condition survey of September 24, 2018.  
**Stockton Ship Channel:** Condition survey of January 26-30, 2019.  
**Suisun Bay Channel (Reach 2):** Post-dredge survey of October 15, 2018.  
**Suisun Bay Channel (Reach 3A-E):** Post-dredge survey of October 17, 2018.  
**Suisun Bay Channel (Bullshead Reach):** Condition survey of April 19, 2017.  
**Suisun Bay Channel (New York Slough):** Post-dredge survey of October 21, 2018.

Disposal Site Condition Surveys:

**SF-08 (Main Ship Channel Disposal Site):** Condition survey of October 31, 2018.

**SF-09 (Carquinez):** Condition survey of September 17, 2018.

**SF-10 (San Pablo Bay):** Condition survey of September 17, 2018.

**SF-11 (Alcatraz Island):** Condition survey of February 5, 2019.

**SF-16 (Suisun Bay Disposal Site):** Condition survey of July 3, 2018.

**SF-17 (Ocean Beach Disposal Site):** Condition survey of November 7, 2018.

**Requested Surveys:**

Pre/Post-dredge and condition surveys are scheduled to occur throughout the year for all of San Francisco District's in-bay projects which are planned to be dredged in FY19.

**NEW WEB ADDRESS – USACE WORK PLAN:**

<http://www.usace.army.mil/Missions/Civil-Works/Budget/>

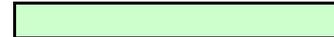
# O&M DREDGING PLAN FOR FY19\*

12-Mar-19

Project	Bid Opening Award Date	12-Mar-19												Estimated CY	Planned Placement Site		
		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	FY 2020					
SF Main Ship Channel	N/A				■											350kcy	OBDS/ SF-8
Pinole Shoal	N/A				■											300kcy	SF-11/SF-10
Richmond Inner Harbor	17 Apr/30 Apr		◆	◆		▨										350kcy	DODS/upland least cost
Redwood City Harbor	29 Apr/10 May			◆	◆	▨										300kcy	SF-11
Oakland Harbor	30 Apr/14 May			◆	◆	▨										750kcy	DODS/upland least cost
Combined Sac/San Joaquin	8 May/21 May			◆	◆		▨	▨								350kcy	Various Upland
Suisun Bay Channel	26 Jun/10 Jul				◆	◆		▨								175kcy	SF-16



**Ongoing Contracts**  
**New SPN Contract including Mobilization**  
**West Coast Hopper Contract**  
**Government Dredge**



**Environmental Window**

◆ Bid Opening

◆ Contract Award

\* Program execution is based on the FY19 President's Budget, Workplan and Federal Standard plan for each project.



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Harbor Safety Committee of the  
San Francisco Bay Region Clearing House  
c/o Marine Exchange of the San Francisco Bay Region  
505 Beach Street, Suite 300  
San Francisco, California 94133-1131  
415-441-6600 fax 415-441-3080 [hsc@sfmtx.org](mailto:hsc@sfmtx.org)

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## San Francisco Clearinghouse Report

March 14, 2019

- ✎ In February the clearinghouse did not contact OSPR regarding any possible escort violations.
- ✎ In February the clearinghouse did not receive any notifications of vessels arriving at the Pilot Station without escort paperwork.
- ✎ The clearinghouse has not contacted OSPR in 2019 regarding possible escort violations. The clearinghouse contacted OSPR 1 time in 2018 about a possible escort violation. The clearinghouse did not contact OSPR in 2017 about possible escort violations. The clearinghouse contacted OSPR 1 time in 2016 about a possible escort violation. The clearinghouse contacted OSPR 3 times in 2015 about possible escort violations. The clearinghouse contacted OSPR 5 times regarding possible escort violations in 2014. The clearinghouse contacted OSPR 1 time in 2013. The clearinghouse contacted OSPR 3 times in 2012 regarding possible escort violations, 3 times in 2011, 6 times in 2010, 8 time 2009; 4 times 2008; 9 times in 2007; 9 times in 2006; 16 times in 2005; 24 times in 2004; twice in 2003; twice in 2002; 6 times in 2001; 5 times in 2000.
- ✎ In February there were 99 tank vessel arrivals; 16 ATBs, 4 Chemical Tankers, 24 Chemical/Oil Tankers, 23 Crude Oil Tankers, 20 Product Tankers, and 12 Tugs with Barges.
- ✎ In February there were 278 total vessel arrivals.

# San Francisco Bay Clearinghouse Report For February 2019

## San Francisco Bay Region Totals

	<u>2019</u>		<u>2018</u>	
Tanker arrivals to San Francisco Bay	71		66	
ATB arrivals	16		9	
Barge arrivals to San Francisco Bay	12		9	
Total Tanker and Barge Arrivals	99		84	
Tank ship movements & escorted barge movements	315		261	
Tank ship movements	169	53.65%	142	54.41%
Escorted tank ship movements	133	42.22%	118	45.21%
Unescorted tank ship movements	36	11.43%	24	9.20%
Tank barge movements	146	46.35%	119	45.59%
Escorted tank barge movements	11	3.49%	5	1.92%
Unescorted tank barge movements	135	42.86%	114	43.68%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 0 0

<b>Movements by Zone</b>	<b>Zone 1</b>	<b>%</b>	<b>Zone 2</b>	<b>%</b>	<b>Zone 4</b>	<b>%</b>	<b>Zone 6</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Total movements	195		312		0		145		652	
Unescorted movements	109	55.90%	170	54.49%	0	0.00%	73	50.34%	352	53.99%
Tank ships	87	44.62%	134	42.95%	0	0.00%	68	46.90%	289	44.33%
Tank barges	22	11.28%	36	11.54%	0	0.00%	5	3.45%	63	9.66%
Escorted movements	86	44.10%	142	45.51%	0	0.00%	72	49.66%	300	46.01%
Tank ships	84	43.08%	131	41.99%	0	0.00%	66	45.52%	281	43.10%
Tank barges	2	1.03%	11	3.53%	0	0.00%	6	4.14%	19	2.91%

Notes:

1. Information is only noted for zones where escorts are required.
2. All percentages are percent of total movements for the zone.
3. Every movement is counted in each zone transited during the movement.
4. Total movements is the total of all unescorted movements and all escorted movements.

# San Francisco Bay Clearinghouse Report For 2019

## San Francisco Bay Region Totals

	<u>2019</u>		<u>2018</u>	
Tanker arrivals to San Francisco Bay	142		787	
ATB arrivals	31		123	
Barge arrivals to San Francisco Bay	23		143	
Total Tanker and Barge Arrivals	196		930	
Tank ship movements & escorted barge movements	642		3,743	
Tank ship movements	351	54.67%	2,058	54.98%
Escorted tank ship movements	280	43.61%	1,613	43.09%
Unescorted tank ship movements	71	11.06%	445	11.89%
Tank barge movements	291	45.33%	1,685	45.02%
Escorted tank barge movements	34	5.30%	234	6.25%
Unescorted tank barge movements	257	40.03%	1,451	38.77%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR

	0	0
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<b>Movements by Zone</b>	<b>Zone 1</b>	<b>%</b>	<b>Zone 2</b>	<b>%</b>	<b>Zone 4</b>	<b>%</b>	<b>Zone 6</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Total movements	389		629		0		289		1,307	
Unescorted movements	199	51.16%	324	51.51%	0	0.00%	132	45.67%	655	50.11%
Tank ships	162	41.65%	253	40.22%	0	0.00%	119	41.18%	534	40.86%
Tank barges	37	9.51%	71	11.29%	0	0.00%	13	4.50%	121	9.26%
Escorted movements	190	48.84%	305	48.49%	0	0.00%	157	54.33%	652	49.89%
Tank ships	181	46.53%	274	43.56%	0	0.00%	141	48.79%	596	45.60%
Tank barges	9	2.31%	31	4.93%	0	0.00%	16	5.54%	56	4.28%

### Notes:

- Information is only noted for zones where escorts are required.
- All percentages are percent of total movements for the zone.
- Every movement is counted in each zone transited during the movement.
- Total movements is the total of all unescorted movements and all escorted movements.



## CALIFORNIA STATE LANDS COMMISSION

### HARBOR SAFETY COMMITTEE MONTHLY REPORT - FEBRUARY COMPARISON

#### VESSEL TRANSFERS

	Total Transfers	Total Vessels Monitored	Total Transfers Percentage
FEBRUARY 1 - 28, 2018	165	50	30.30
FEBRUARY 1 - 28, 2019	204	85	41.67

#### CRUDE OIL / PRODUCT TOTALS

	Crude Oil ( D )	Crude Oil ( L )	Overall Product ( D )	Overall Product ( L )	GRAND TOTAL
FEBRUARY 1 - 28, 2018	14,553,000		18,267,303	7,900,973	26,168,276
FEBRUARY 1 - 28, 2019	14,043,100		18,576,700	9,025,183	27,601,883

#### OIL SPILL TOTAL

	<u>TERMINAL</u>	<u>VESSEL</u>	<u>Total</u>	<u>Gallons Spilled</u>
FEBRUARY 1 - 28, 2018	0	0	0	0
FEBRUARY 1 - 28, 2019	0	0	0	0

**Disclaimer:**

*Please understand that the data is provided to the California State Lands Commission from a variety of sources; the Commission cannot guarantee the validity of the data provided to it.*



CALIFORNIA  
AIR RESOURCES BOARD



# Updates on California At Berth Regulation

Angela Csondes, Manager  
Marine Strategies Section  
March 14, 2019  
Harbor Safety Committee Meeting  
Port of Oakland

# Overview

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- I. Overview of Existing At-Berth Regulation
- II. New At Berth Regulation
- III. Next Steps
- IV. Questions

# I. OVERVIEW OF EXISTING AT-BERTH REGULATION



# At-Berth Regulation Background

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- ◆ Requires reduction in NOx and diesel PM from auxiliary engines, reduced GHGs due to clean electricity grid
- ◆ Board approved in December 2007 and effective January 2009
- ◆ Visit and power reduction:
  - 50% in 2014, 70% in 2017 and 80% in 2020
- ◆ Affected Ports: San Francisco, Oakland, Hueneme, Los Angeles (POLA), Long Beach (POLB), and San Diego

# At-Berth Regulation Regulated Fleets

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- ◆ Container & reefer fleets: 25+ visits per year
- ◆ Passenger fleets: 5+ visits per year



Container Vessels



Refrigerated (Reefer) Cargo  
Vessels



Cruise Vessels

# Shore Power Connection Examples

Vaults



Mobile AMP Box

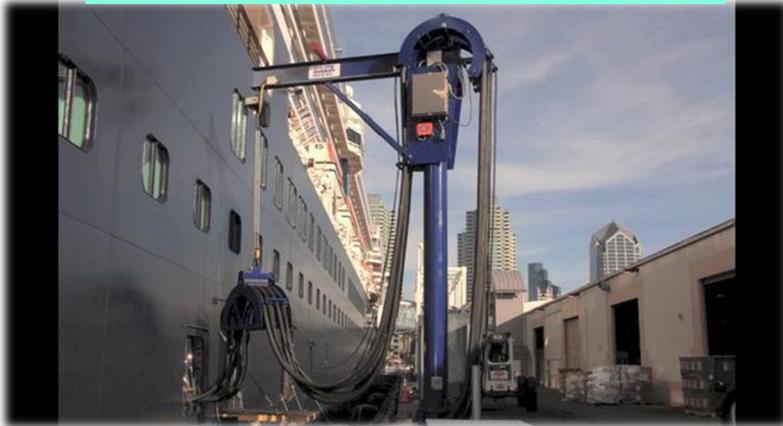
AMP Mobile



Mobile Reel System



Tower System



# Shore Power Alternatives

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## Emissions capture & control systems

- ◆ Two alternatives to shore power in commercial operation at Ports of Los Angeles and Long Beach

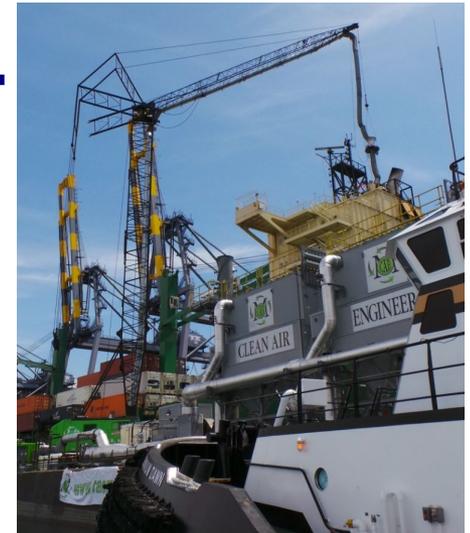
1. Barge-based (in operation):

METS-1 in Los Angeles

AMECS in Long Beach

2. Land-based (demonstration):

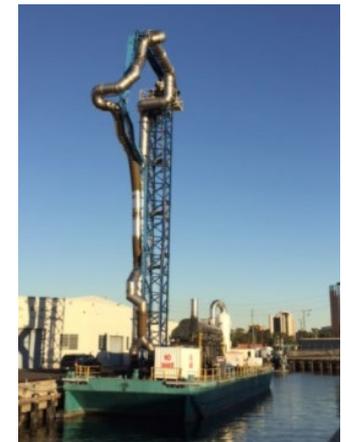
Shore-Kat in  
Los Angeles



METS-1



Shore Kat



AMECS

# At-Berth Regulation Achievements

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- ◆ Between 2014-2017, ~10,000 shore power visits in California
- ◆ Shore power ready: 23 terminals, 63 berths, >400 vessels
- ◆ Two alternatives in commercial operation
- ◆ In 2016, fleets reduced emissions from OGVs at berth by:
  - 3.5 tons per day NO<sub>x</sub>
  - 21.5 tons per year diesel PM



# II. New At Berth Regulation

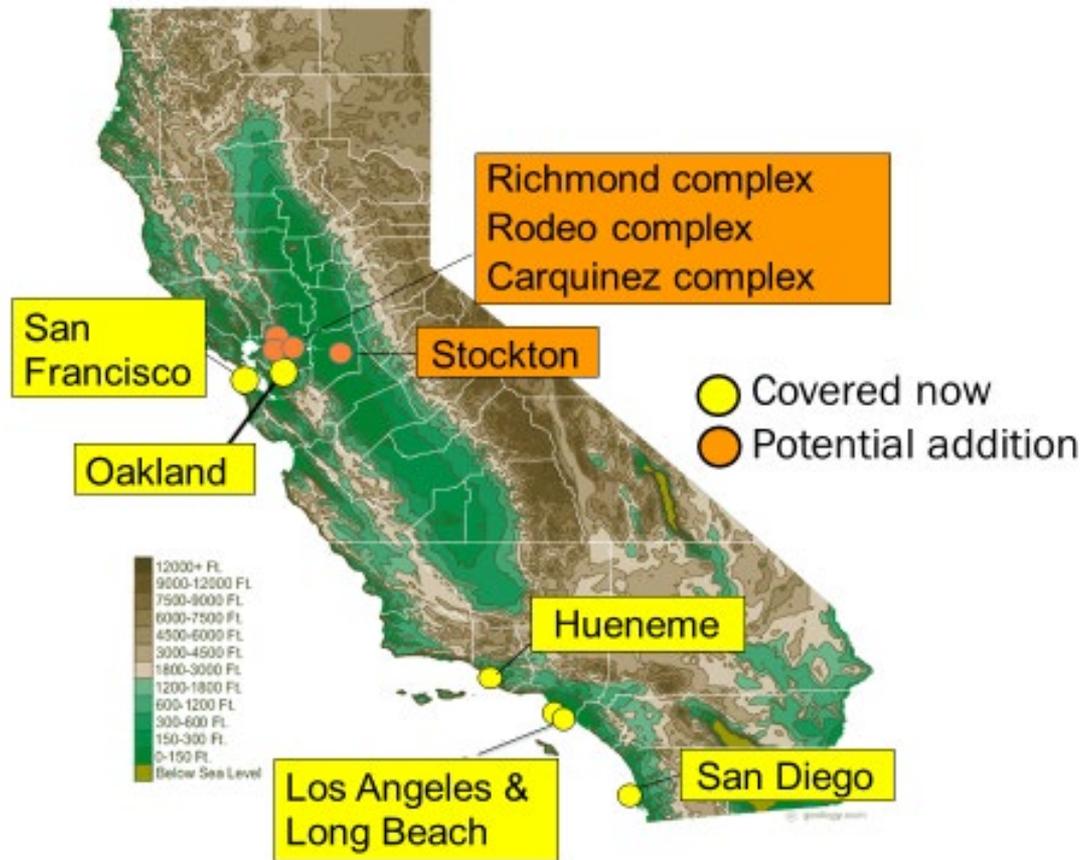


# At Berth Updates Needed to Achieve Added Health Benefits

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- ◆ Considering control requirements for additional vessel categories and boilers (for certain tankers)
- ◆ Controls at more ports and marine terminals
- ◆ Use an approved compliance strategy for each visit
  - Shore power or technologies with a CARB approved Executive Order
- ◆ Draft implementation schedule
  - Containers/Reefers/Cruise in 2021
  - Ro-Ro/Auto carriers in 2025
  - Tankers in 2027 (So Cal) and 2029 (Nor Cal)
- ◆ Opacity standards at berth and at anchor

# Draft California Ports and Marine Terminal Complexes Covered



\*All are in, or adjacent to, disadvantaged communities

# Looking Beyond Auxiliary Engine Controls – Tanker Auxiliary Boilers

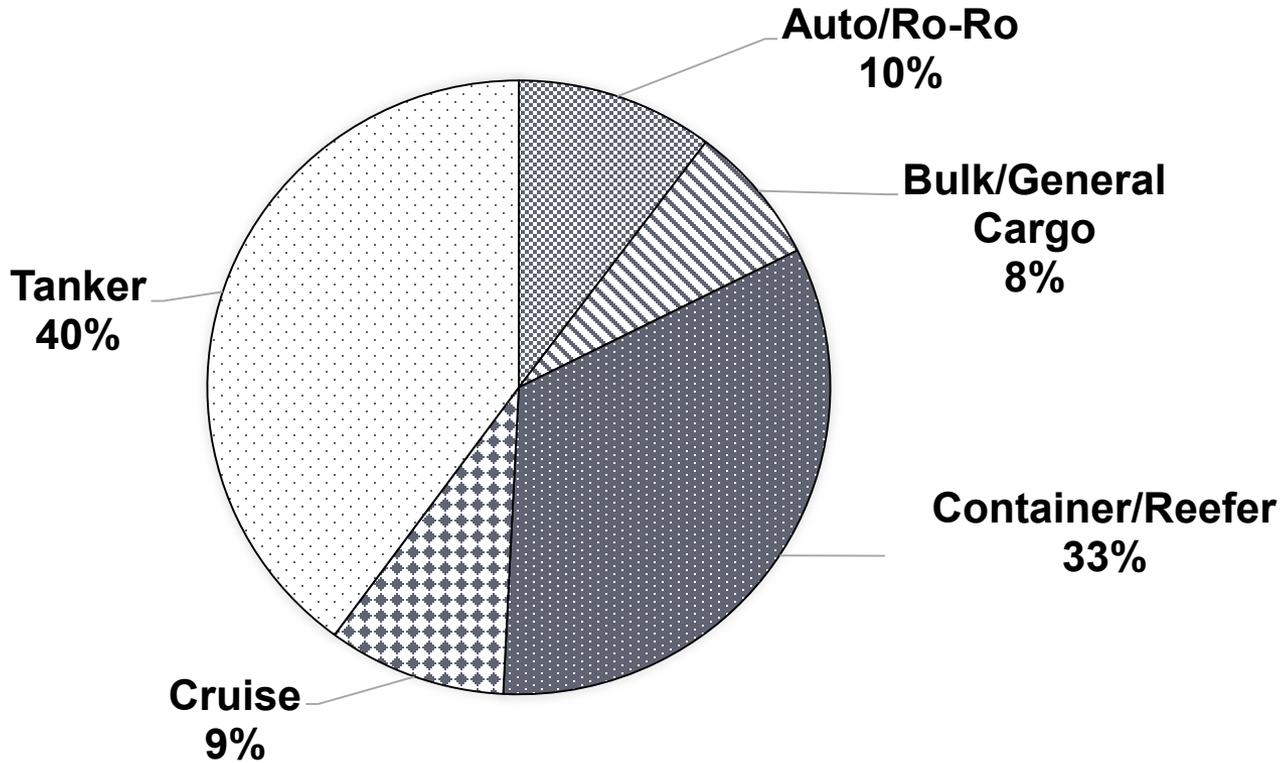
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- ◆ A subset of tanker vessels utilize a large auxiliary boiler onboard to power steam-driven pumps to offload product at berth
- ◆ Tanker boilers are the largest emitting category not subject to the original At-Berth Regulation
- ◆ Boiler emissions profile differs from auxiliary engines
  - PM emissions are not considered Diesel PM (emissions from internal combustion engines are Diesel PM)
  - Cancer and non-cancer health risks exist
- ◆ Boilers are responsible for a significant portion of PM and CO<sub>2</sub> emissions at berth

# OGV At Berth NO<sub>x</sub> Emissions

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2021 Projected Statewide At Berth NO<sub>x</sub> Emissions  
Auxiliary Engine and Boiler  
(Total 10.5 TPD\*)

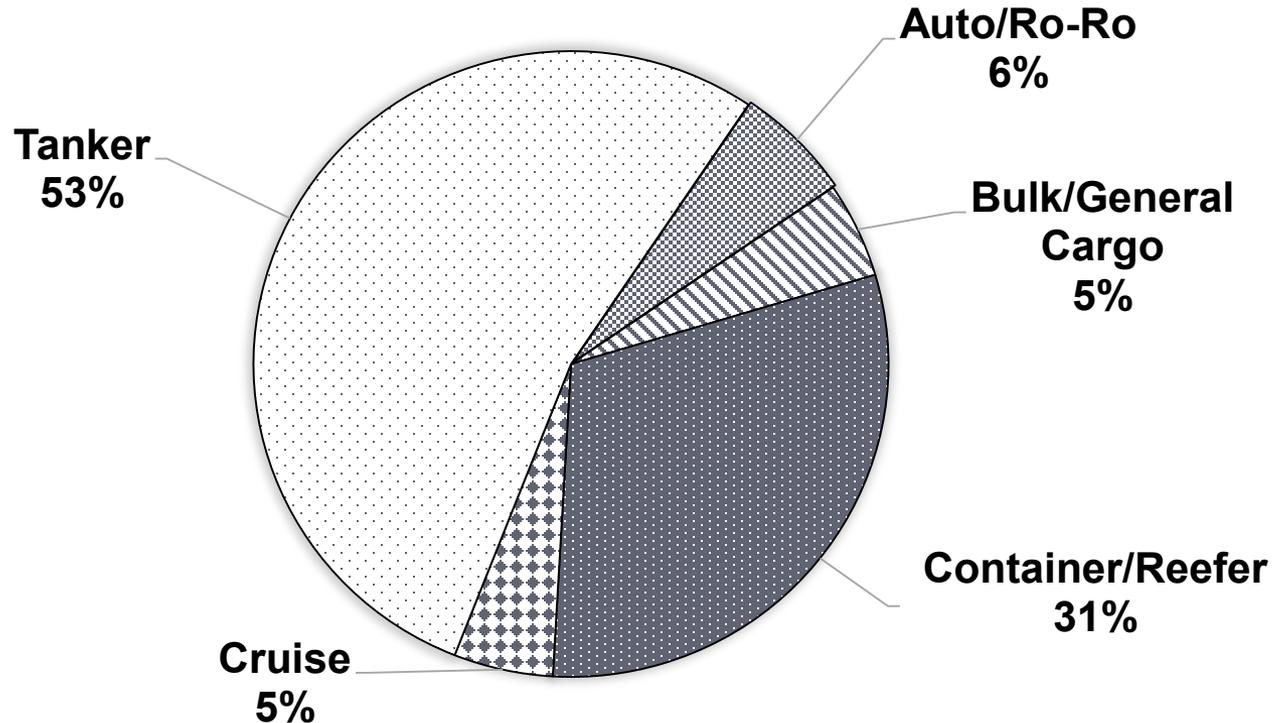


\* Tons per day

\*\* 2018 CARB Emissions Inventory

# OGV At Berth PM<sub>2.5</sub> Emissions

2021 Projected Statewide At Berth PM<sub>2.5</sub> Emissions  
Auxiliary Engine and Boiler  
(Total 113.9 TPY\*)



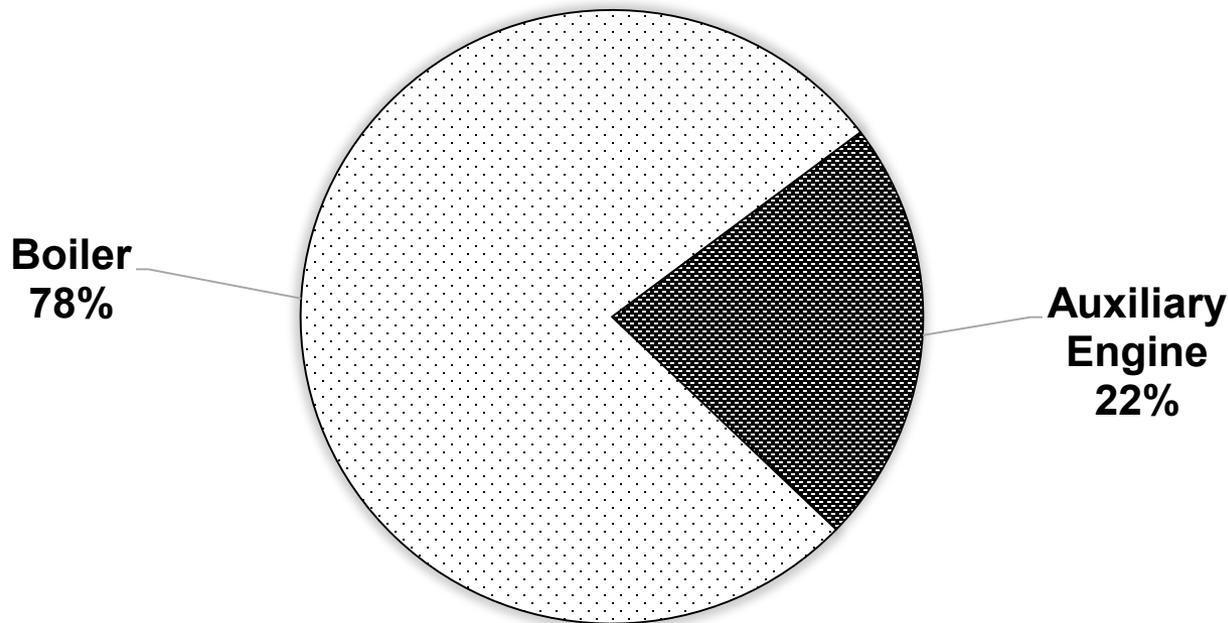
\* Tons per year

\*\* 2018 CARB Emissions Inventory

# Tanker Auxiliary Engine & Boiler At Berth PM<sub>2.5</sub> Emissions

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2021 Statewide At Berth PM<sub>2.5</sub> Emissions  
Tanker Auxiliary Engine and Boiler  
(Total 60.9 TPY\*)



\* Tons per year

\*\* 2018 CARB Emissions Inventory

# Potential Tanker Control Options

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- ◆ Landside/terminal-based controls
  - Barge or land-based emission controls
  - Shore-side power
- ◆ Vessel-based controls
  - Dual-fueled boilers that can use natural gas
  - Advanced boiler design (low NOx burners, more efficient boilers using super-heated steam)
  - Scrubbers
  - SCR, EGR
  - Advanced engine technologies

# III. Next Steps



# Next Steps



- ◆ CARB staff performing in-depth berth/terminal/port analysis, which includes:
  - Analyzing control strategies and infrastructure needs through discussions with ports/terminals, in-person facility tours, industry comment letters, conversations with pilot organizations in Northern/Southern California
  - Assessing state of shore power infrastructure at currently regulated berths
  - Determining if capture and control systems will be barge-based or land-based at new regulated berths, and estimating number of capture and control systems needed
- ◆ CARB staff seeking further collaboration with pilots
  - Visit definition
  - Safe navigation limitations of barge-based emissions capture systems

# Next Steps (cont.)

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- ◆ Public workshops tentatively scheduled for early May (to be held in both Sacramento and Long Beach
  - Revised regulatory text
  - Revised cost analyses
  - Updated cost effectiveness
  - Updated emissions inventory
- ◆ Scheduled Board Hearing date – early December 2019



# IV. Questions



# OGV Regulations Contacts

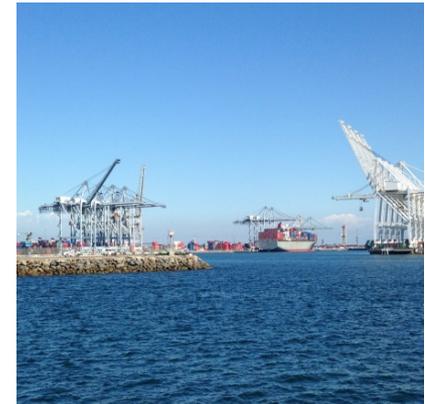
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## At-Berth Regulation

Nicole Light, Air Pollution Specialist

(916) 445-6012

Nicole.Light@arb.ca.gov



## Fuel Regulation

Lynsay Carmichael, Air Resources Engineer

(916) 327-5784

Lynsay.Carmichael@arb.ca.gov

Angela Csondes, Manager, Marine Strategies Section

(916) 323-4882

Angela.Csondes@arb.ca.gov

# Links for More Information

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At-Berth Regulation:

<http://www.arb.ca.gov/ports/shorepower/shorepower.htm>

Vessel Fuel Regulation:

<http://www.arb.ca.gov/marine>

CARB Enforcement Page:

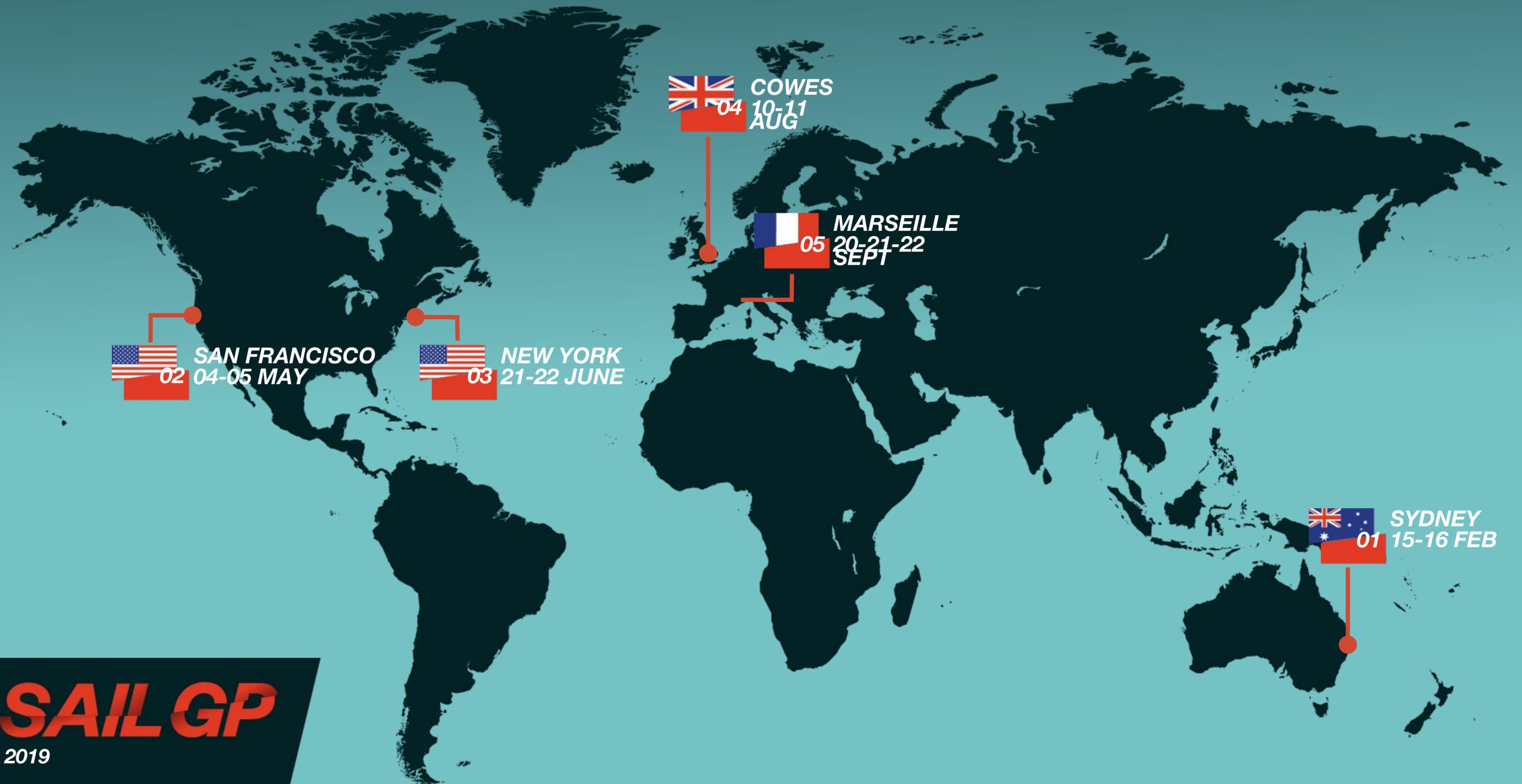
<https://arb.ca.gov/enf/enf.htm>

# SAILGP

*FUELED BY ATHLETES, POWERED BY NATURE.*

# ***HELLO WORLD.***

*The inaugural season will start in 2019,  
with six teams and five events in global,  
iconic cities. The first event in Sydney  
Australia in February 2019.*



  
**02** **SAN FRANCISCO**  
04-05 MAY

  
**03** **NEW YORK**  
21-22 JUNE

  
**04** **COWES**  
10-11 AUG

  
**05** **MARSEILLE**  
20-21-22 SEPT

  
**01** **SYDNEY**  
15-16 FEB

**SAILGP**

2019

SAUSALITO

ANGEL ISLAND

ALCATRAZ ISLAND

TREASURE ISLAND

GOLDEN GATE BRIDGE

SPECTATOR AREA

SPECTATOR AREA

SPECTATOR AREA

SPECTATOR AREA

CITY FRONT RACE AREA

02

PIER 43 1/2 OFFICIAL SPECTATOR BOAT EXPERIENCE

01

YACHT CLUB PENINSULA RACE VILLAGE

PRESIDIO

SAN FRANCISCO

YERBA BUENA ISLAND

ALAMEDA ISLAND TECHNICAL AREA

03

BAY BRIDGE

ALAMEDA ISLAND



02

SAN FRANCISCO 04-05 MAY

SAIL GP

# ***Race Course***



# SPECIAL LOCAL REGULATION MAXIMUM RACE AREA FOOTPRINT



# Race Days

1000 - 1600	Active Race Box
1118 - 1155	Dock Out and Crew Training
1200 - 1400	Race Window
1235 - 1250	Fleet Race #1
1250 - 1255	Ferry Crossing Opportunity (5 min)
1304 - 1319	Fleet Race #2
1320 - 1325	Ferry Crossing Opportunity (5 min)
1333 - 1348	Final Race
1400	Return to Dock

The Race Box should be fairly low impact to commercial vessels as there will traffic lanes north, east and west of the course.

There will be brief windows throughout the day when, if **necessary**, commercial vessels can be escorted through the south side of the Race Box along the YC shoreline:

Before the start (1000-1215)

5 minutes between Races

15 minutes after the end of Races

## Race Course

In order to deliver high quality races in a fair, safe, timely and professional manner, the race course must be set up in a **protected race box**, exclusive to the race yachts and a limited number of accredited vessels. The race box will be set up and managed by Race Management (RM)

## Stake Marks

The race box will be demarcated by a series of approximately **12 large, orange, inflatable “stake marks”** along the perimeter. The stake marks will be set as early as practical by the RM course marshals to give public boaters an idea of where they can spectate from; however, the stake marks may need to be repositioned if the course shifts, in which case the course marshal will relocate the spectator fleet accordingly.

## Official Flags

Only boats with an **official flag** are allowed to enter and operate within the race box. Any vessel that does not have an official flag shall stay outside of the stake marks delineating the race box

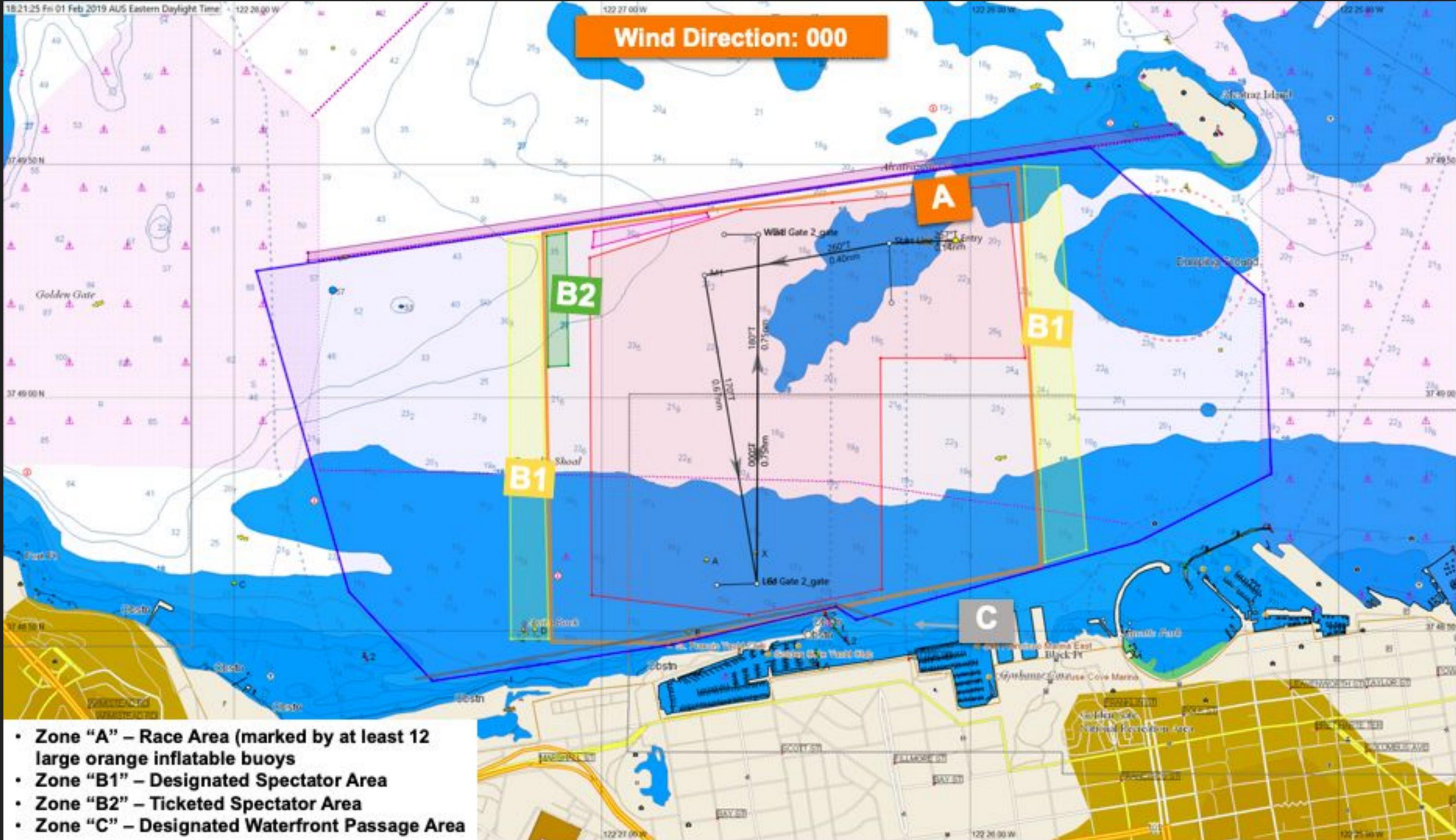
## Race Box Management

The race box will be **patrolled one hour before** the race broadcast window begins and up to 30 minutes after the conclusion of racing.

The Regatta Director, Iain Murray, is in charge running the races. The Regatta Director designs the race course and his team of mark layers move and set the turning marks as required



Wind Direction: 000



- Zone "A" – Race Area (marked by at least 12 large orange inflatable buoys)
- Zone "B1" – Designated Spectator Area
- Zone "B2" – Ticketed Spectator Area
- Zone "C" – Designated Waterfront Passage Area

# *Practice Days*

Practice Days: Tuesday, April 30th and Friday, May 3rd

Race Box Active: 1000 - 1600



# Support Boats

**13**

Race Course  
Marshal  
Boats

**6**

Team Support  
Boats  
(EMT + Diver)

**4**

Press/Media  
Boats

**3**

Guest Chaser  
Boats

**3**

Mark Boats

**2**

Local Safety  
Boats  
(for OWS)

**1**

Umpire Boat

**1**

Race  
Committee  
Boat

**1**

Rescue Boat

## *GROUND CONTROL*

Ambulances and medical teams TBD provider

## *EXTRACTION POINT*

To be confirmed

## *HOSPITALS*

San Francisco General

UCSF Medical Center

California Pacific Medical Center

Kaiser

## *INCIDENT REPORTING*

League will provide Incident Reports to Event Control

Services including radio communications, event control

room and incident report tracking.

# *Technical Base*

Alameda

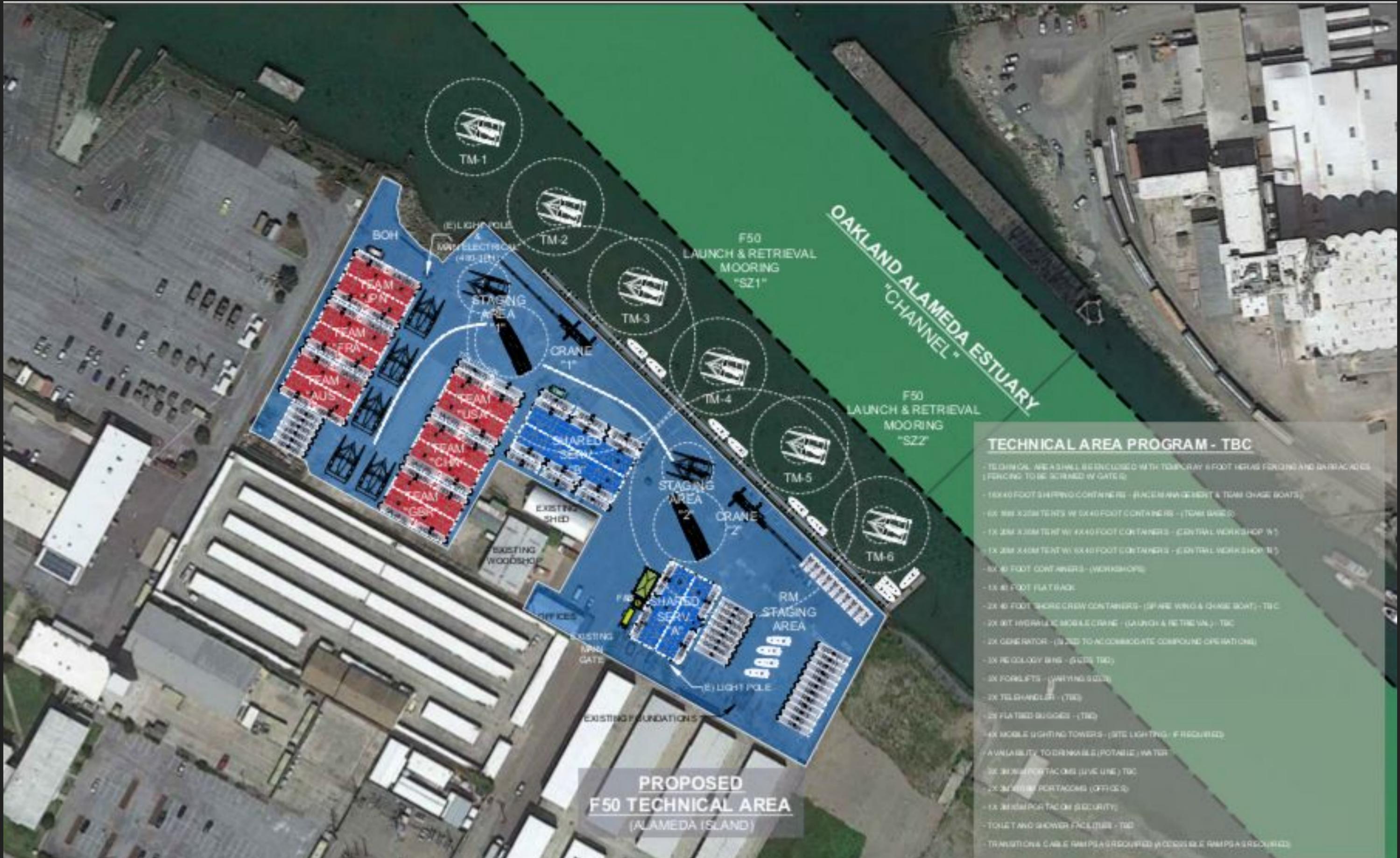
April 1 - May 15



**PROPOSED  
F50 TECHNICAL AREA  
(ALAMEDA ISLAND)**

**TECHNICAL AREA PROGRAM - TBC**

- TECHNICAL AREA SHALL BE ENCLOSED WITH TOWER CRAY 6 FOOT HEIGHT FENCING AND BARRICADES (FENCING TO BE SCRIMED W/ GATES)
- 16X40 FOOT SHIPPING CONTAINERS - (PLACE W/ ACCESS DOOR & TEAM CHASE BOATS)
- 6X 8M X 32M TENTS W/ 6X40 FOOT CONTAINERS - (TEAM BASES)
- 1X 2M X 32M TENT W/ 4X40 FOOT CONTAINERS - (CENTRAL WORKSHOP W/)
- 1X 2M X 40M TENT W/ 6X40 FOOT CONTAINERS - (CENTRAL WORKSHOP R/S)
- 6X 40 FOOT CONTAINERS - (WORKSHOPS)
- 1X 40 FOOT FLATBACK
- 2X 40 FOOT SHORE CREW CONTAINERS - (SPARE W/ W/O & CHASE BOAT) - TBC
- 2X 80T HYDRAULIC MOBILE CRANE - (LAUNCH & RETRIEVAL) - TBC
- 2X GENERATOR - (SIZED TO ACCOMMODATE COMPOUND OPERATIONS)
- 3X RECYCLOGY BINS - (SIZES TBD)
- 5X FORKLIFTS - (VARYING SIZES)
- 2X TELEHANDLER - (TBD)
- 2X FLATBED BUCKETS - (TBD)
- 4X MOBILE LIGHTING TOWERS - (SITE LIGHTING - IF REQUIRED)
- AVAILABILITY TO DRINKABLE (POTABLE) WATER
- 3X 30M PORTACOMBS (LIVE LINE) - TBC
- 2X 30M PORTACOMBS (OFFICE)
- 1X 30M PORTACOMB (SECURITY)
- TOILET AND SHOWER FACILITIES - TBD
- TRANSITIONAL CABLE RAMP(S) & DISCONNECTED WOODS/BLE RAMP(S) & DISCONNECTED





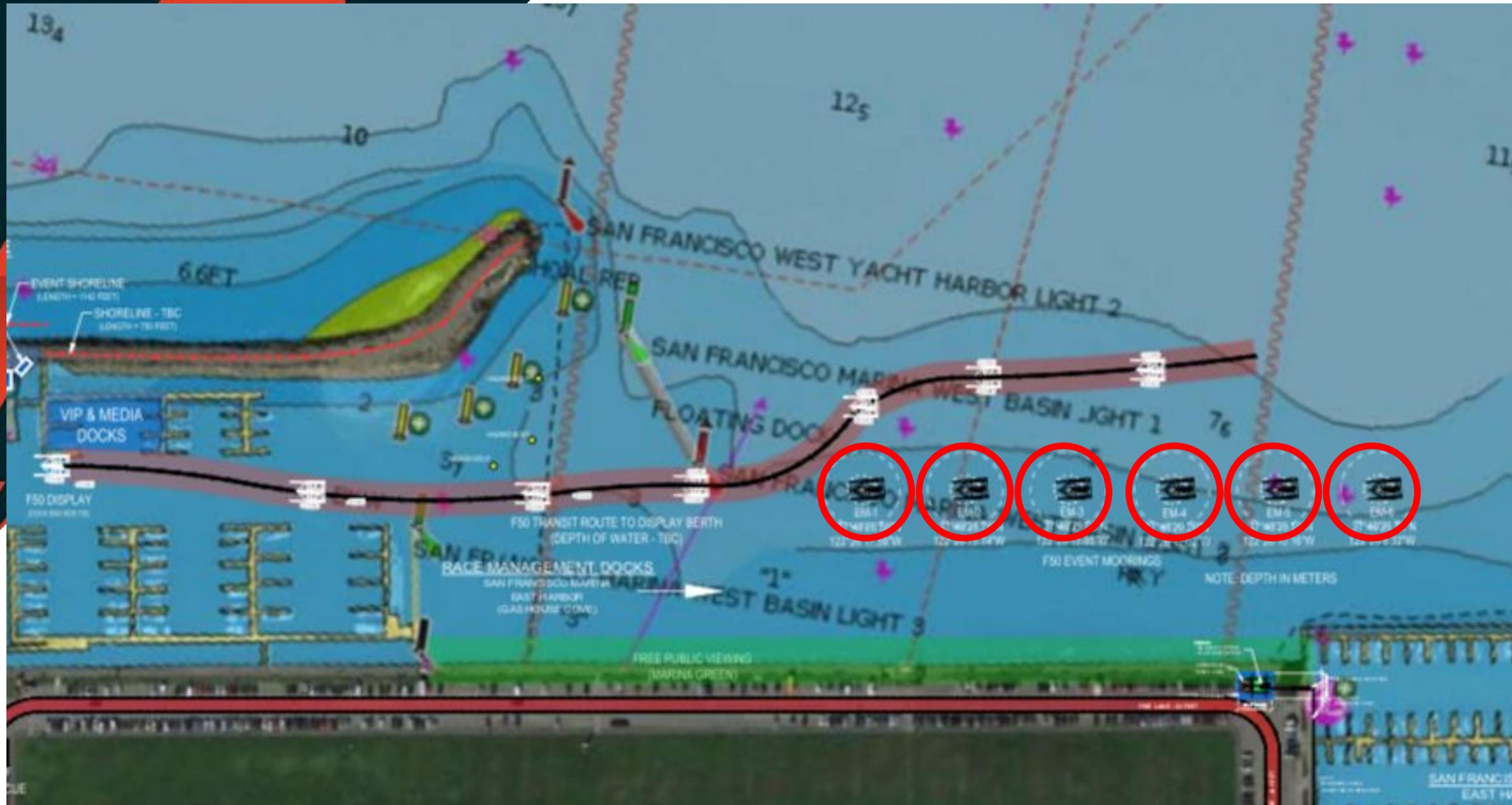
# ***Moorings***



# Alameda Moorings: 6 Launch & Retrieval Moorings: 2



# SF Marina Moorings: 6





A diver is shown from the chest up, wearing a diving mask and snorkel, bobbing in choppy water. The image is dark and has a blue-green tint. The text 'THANK YOU' is overlaid in the center in a bold, white, italicized sans-serif font.

***THANK  
YOU***