PUMPOUT REPORT 2019

California Clean Vessel Act Pumpout Performance Report

San Francisco Estuary Partnership
The Bay Foundation

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Cover photos:
Marina Bay Yacht Harbor by Liz Juvera, Pumpout at Safe Harbor Cabrillo Isle in San Diego by Kim Riley

Design by All My Sisters

Discharging sewage overboard creates environmental and human health problems, especially in a state with more than four million recreational boaters. To reduce the negative impacts of discharging sewage overboard, all boaters are encouraged to use sewage management facilities, including pumpout stations, dump stations, and mobile pumpout services. Since 2008, the San Francisco Estuary Partnership and The Bay Foundation have monitored public sewage pumpout stations throughout the state. In 2019, Morro Bay National Estuary Program began monitoring sewage pumpout stations within Morro Bay Harbor. All monitoring is funded by California State Parks Division of Boating and Waterways through the Clean Vessel Act grant program. This Pumpout Report highlights findings on the condition and operational status of pumpout stations in 2019.

→ KEY PARTNERS

NORTHERN CALIFORNIA

San Francisco Estuary Partnership (SFEP), a National Estuary Program, monitors 82 pumpout stations throughout the San Francisco Bay and Delta and Monterey Bay regions.
www.sfestuary.org/boating / (415) 778-6682

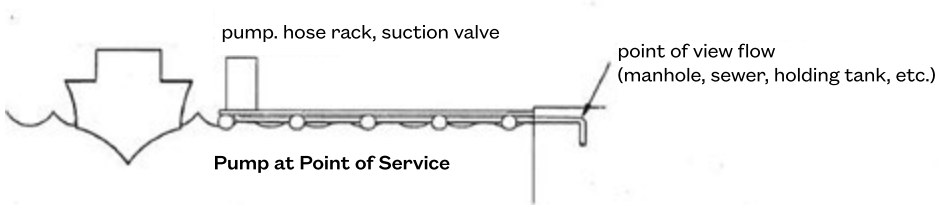
SOUTHERN CALIFORNIA

The Bay Foundation (TBF), a 501(c)3 non-profit organization, and Morro Bay National Estuary Program (MBNEP) monitor 73 pumpout stations from San Luis Obispo County to San Diego County.
www.santamonicabay.org / (888) 301-2527

Funding for this project is provided by a grant from California State Parks Division of Boating and Waterways (DBW) through the federal Clean Vessel Act (CVA) grant program. This program provides grants to both public and private boating facilities for up to 75 percent of the construction, renovation, operation, and maintenance of pumpout and dump stations to service recreational vessels. Funding comes from the Sport Fish Restoration and Boating Trust Fund, administered federally by the U.S. Fish and Wildlife Service. For more information, visit www.dbw.parks.ca.gov, call (888) 326-2822, or contact:
California State Parks Division of Boating and Waterways
One Capitol Mall, Suite 500, Sacramento, CA 95814

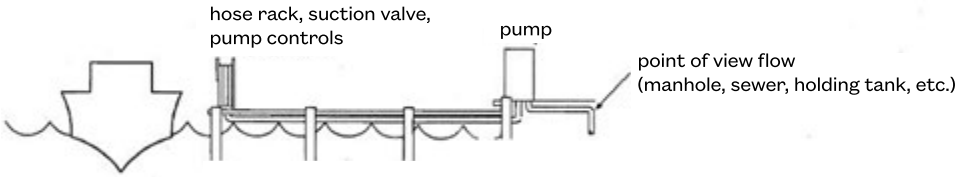
STATIONARY PUMPOUT

Pumpout systems are typically found as a stand-alone feature within a marina. They are located dockside where there is sufficient space for a boater to dock and not affect others around them. There are several configurations for these systems:



Pump at Point of Service

This diagram shows the pump system (hose station and pump) as one unit, at the point of service.



Pump Remotely Installed

This diagram shows the pump as two separate entities. The hose rack is at the point of service while the pump is set apart, either at the end of the dock or it can be located landside.

This diagram shows a multiple hose station layout. A single pumpout unit can be plumbed to multiple hose stations, and equipped with a Remote Service System as shown in the diagram. There are limitations to multiple hose station configurations.

IN-SLIP PUMPOUT

Another option available to marinas includes in-slip pumpout systems. There are several variations to this type of system. However, this system allows a boater to empty the sewage holding tank without leaving the slip. Variations include:

In-slip hose cart at West Point Harbor.
Photo by Adrien Baudrimont

Option 1: The marina installs a centralized pumpout station with multiple pumpout hydrants located throughout the marina, and spaced (approximately 40 feet to 60 feet apart) so that a portable hose can reach from the hydrant, located on the dock, to each nearby vessel. The pumpout hose is mounted on a mobile cart. The cart with the hose is wheeled to each boat as it needs pumpout servicing. The hose is unreeled and connected to both the hydrant and boat to be serviced. Wireless transmitters are available that allow convenient on-off operation without the need for someone to run back to the pump each time it needs activating.

Option 2: The marina installs multiple pumpout hydrants throughout the marina, and spaced so that a portable hose can reach from the hydrant to each nearby vessel. A mobile cart containing both a sewage pump and hose is then then wheeled to each boat as it needs pumpout servicing. The hose is unreeled and connected to both the hydrant and boat to be serviced. The sewage pump is activated and uses the hydrant and piping system to discharge the boats holding tank contents.

In-slip pumpout tank at Oyster Cover Marina.
Photo by Adrien Baudrimont

Option 3: The marina uses a mobile cart that is equipped with a sewage pumpout, hose, and small holding tank (typically 20 to 40 gallons). This cart is located on the docks and is wheeled to each boat as it needs pumpout servicing. The cart, now loaded with sewage is then wheeled to a hydrant located somewhere on the docks and the pump is now used to discharge the sewage landside for disposal and treatment.

MOBILE PUMPOUT

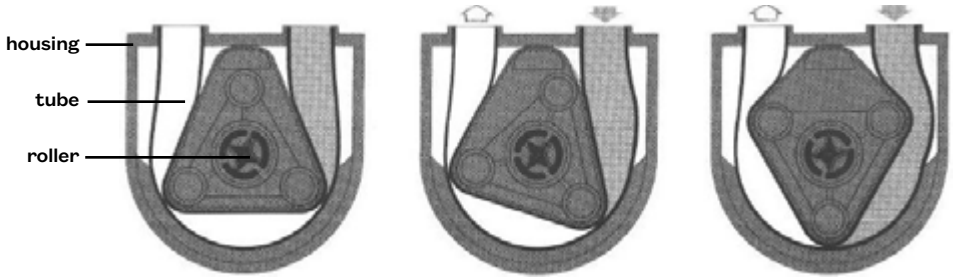
In many areas of California, boaters can have their boat sewage removed by a mobile service. Mobile service vessels are retrofitted to hold a large quantity of sewage and can typically pump out dozens of vessels without having to discharge into a dockside pumpout system. This service can be managed by a contractor or provided by the marina itself, or simply allowed on premises as a boater solicited service.

There are benefits and drawbacks to each of these setups, but the benefits of mobile pumpouts are very clear. One of the largest obstacles boaters cite when asked about their sewage discharge is convenience. Mobile pumpouts are a great solution as they can be arranged when boaters are not at the marina. This hands free option is relatively inexpensive and can be a very attractive addition to a marina's compendium of services.

There are three primary types of pumps used in a sewage pumpout system.

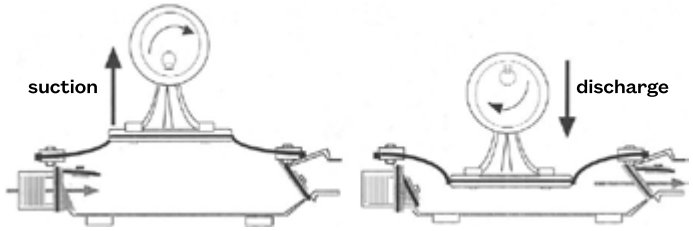
PERISTALTIC

Peristaltic pumps work by displacement, alternating compression and relaxation on a tube, drawing contents into the tube and creating suction. The tube is located in an enclosed housing and is compressed by a roller.



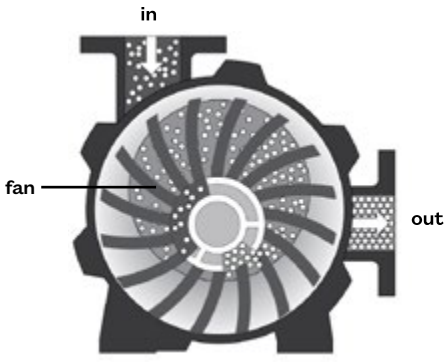
DIAPHRAGM

Diaphragm pumps work by displacement. They use the backward and forward motion of a diaphragm (or membrane) to fill and empty a chamber with the contents being pumped, creating a suction. This pump works like a plunger.



VACUUM

Vacuum pumps work by creating a pressure difference, usually with the use of a fan. The fan forces contents forward increasing pressure in front and decreasing pressure behind the fan, this creates suction. A vacuum (which creates a pressure difference) is what allows humans to drink through a straw.



⟶ MAINTENANCE RECOMMENDATIONS

Preventative maintenance is the best solution for avoiding problems. Marina operators should inspect the pump and pump enclosure on a weekly basis and, when possible, daily. These inspections should check for leaks, cracks, unusual wear, and if there is missing equipment.

HOSE

Look for damage that could affect performance of the system, like tears or a collapsed hose wall. To keep repair costs down, sections of hose can be repaired rather than replacing the entire hose; however the number of repairs on one hose should be limited as to not impede optimum operation.

SIGHT GLASS

Look for cracks and make sure the movement of effluent is visible through the sight glass.

NOZZLE

Look for signs of wear, including cracks and tears. Ensure that the tip has not been cut off and there is a backflow flap in place.

BALL VALVE

Check that handles are not broken and can be easily rotated.

HOUR COUNTER

Ensure that the hour counter is not broken and functions properly.

SIGNAGE

Ensure there is adequate signage and it is legible. Signage should include pumpout symbol, funding credit, instructions, hours of operation, pumpout cost, contact number for problems, and on/ off buttons.

UNUSUAL NOISES

Turn the pump on and listen for unusual noises including squeaking, rattling, and grinding, also listen for air leaks, specifically around threaded connections.

Photo credit:
1. Victoria Gambale, 2. The Bay Foundation, 3. J. Harvell, 4. Michelle Staffield, 5. Victoria Gambale, 6. Carrie Baldwin

⟶ WHY MONITOR PUMPOUT STATIONS?

The goal of pumpout station monitoring is to promote a sense of accountability for condition and operational status of pumpout stations, promote useful pollution prevention amenities for boaters, and decrease the amount of sewage discharged into waterways.

Pumpout station monitoring allows Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation to:

— ensure stationary pumpout equipment is operational for use at all times.
— track the general condition and evaluate performance of pumpout stations.
— assist facilities that do not meet Division of Boating and Waterways grant requirements by offering a reliable source of technical assistance and resources.
— promote the installation and proper maintenance of pumpout stations.
— maintain contact with recipients of DBW's grant.

⟶ MONITORING RANGE & FREQUENCY

SOUTHERN CALIFORNIA

The Bay Foundation and Morro Bay National Estuary Program monitor 73 publicly accessible pumpout stations in 14 Southern California harbors from Morro Bay to San Diego.

NORTHERN CALIFORNIA

San Francisco Estuary Partnership monitors 82 publicly accessible pumpout stations in 67 Northern California marinas throughout the San Francisco Bay and Delta and Monterey Bay.

All units were monitored quarterly. Because monitoring is only conducted four times per year, the analysis presented in this report is a snapshot of how units performed during limited on-site visits.

⟶ MONITORING PARAMETERS

Signage in Balboa Yacht Basin
Photo by Carrie Baldwin

Pumpout Nav app is used to standardize data collection, improve efficiency, and reduce error.

Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation note presence or absence of the following signage:

— Pumpout symbol
— Funding credit
— Instructions for pumpout operation
— Hours of operation
— Pumpout usage cost
— Contact number for problems
— On/off buttons

Condition of parts are rated.
0 = absent, 1 = needs repair, 2 = worn, 3 = excellent

Specific parts rated by Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation

Part
Hose
Nozzle
Sight glass
Pedestal
On/ off buttons
Motor unit
Ball valve
Nozzle's backflow flap

Hour counter
Photo by The Bay Foundation

Each motor unit is equipped with an hour counter meter. During site visits, a reading from the meter is recorded. The meter is activated by the motor once it is engaged and counts the elapsed time that the motor runs. The time logged by the meter gives insight to how often the unit is being used. However, due to the immense variation in pumpout type, process technique, and the use of "delay" switches, determining an accurate quantity of sewage pumped from the hour counter is not feasible.

Vacuum pressure is an indication of how well the unit operates and is measured during each monitoring event, in inches of mercury (inHg). By attaching a vacuum gauge to the end of a pumpout hose or nozzle, a reading is taken after a one minute adjustment period has elapsed. Vacuum pressure varies from 0 to 30 inHg. According to equipment manufacturers the optimum vacuum pressure is 22 inHg.

Vacuum pressure
Photo by Victoria Gambale

Vacuum time is another indication of how well the unit operates. During each monitoring event, this is measured by timing how long it takes a pumpout to evacuate five gallons of water. The optimum vacuum time is less than 10 seconds.

Vacuum time
Photo by Grace Lee

Dye tablet dissolving in 5 gallon bucket of water
Photo by Georgia Tunioli

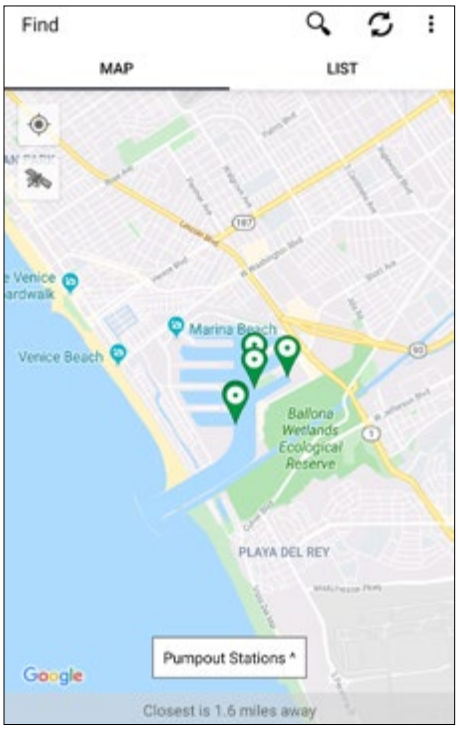
As a courtesy, Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation offer complimentary dye tablet testing. This test can help identify leaks in the plumbing of a sewage pumpout system. The results of this test are not presented in this report.

Other parameters recorded during site visits include: make and model of pumpout, pump type, approximate distance from pump to hose stand, and any recent developments.

Although vacuum pressure and vacuum time tests are used as an indication of how well a unit works, they are not directly comparable to how quickly the unit will empty sewage from a boat's holding tank. These measurements, along with other data collected, are used collaboratively to determine the overall condition of a pumpout station and offer assistance and recommendations to facility operators when needed.

It is important to Morro Bay National Estuary Program, San Francisco Estuary Partnership, The Bay Foundation, and California State Parks Division of Boating and Waterways to keep in close contact with facility managers and be available for questions, clarification on monitoring, and be a reliable source for technical assistance. All monitoring results get emailed directly to participating facility managers through the Pumpout Nav app. Additional follow up is initiated via e-mail or phone with the managers if there were issues of concern from the monitoring. The monitoring effort and follow-up allow staff to work collaboratively with facility managers to resolve any problems that may arise.

⟶ PUMPOUT NAV APP



Pumpout Nav, a free iOS and Android app, is designed for boater use on-the-go and aboard the vessel. It helps boaters geolocate sewage pumpout stations, dump stations, and floating restrooms closest to their current location. Pumpout Nav automatically finds the boater's location and suggests the closest sewage disposal unit on a map or as a list. The app displays each facility's operational status, cost, hours, and detailed location within the marina or harbor. It also provides instructions on how to use a pumpout station and information about the environmental risks and applicable regulations regarding sewage discharge. In 2019, an additional personalized profile feature was added to Pumpout Nav. This feature allows boaters to create a list of their favorite sewage disposal units, log their pumpouts, and choose their boating region.

Pumpout Nav is equipped with a crowdsourcing function that allows any user to flag non-functional sewage disposal units throughout California. If boaters find a non-operational unit, they can report the issue directly through the app and submit photos. When a boater reports a problem, the facility manager and the local Clean Vessel Act Program staff are notified via email. The email alert will let facilities know their disposal unit could be down and should be inspected. The local Clean Vessel Act Program staff can follow up with facility managers to apply for Clean Vessel Act funding to address the issue, if needed.

Pumpout Nav also has a monitoring feature that allows Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation to record monitoring data while in the field. The app is used to standardize data collection, improve efficiency, and reduce error. Once the data is entered and submitted through the app, an automated email is sent to the facility manager summarizing the results of that monitoring effort.

Percentage	Description
90–100	Excellent
80–89	Good
70–79	Fair
60–69	Poor
0–59	Very Poor

In order to standardize the analysis throughout the state for direct comparisons, three parameters are used to determine percentages: vacuum pressure, vacuum time, and condition of parts (specifically hose and nozzle). These three parameters are considered equally important and therefore each parameter represents 33.33% of the total percentages.

The vacuum pressure is calculated as a percentage. The reading is divided by 22, the optimum pressure according to equipment manufacturers. For example, a reading of 21 divided by 22 is 0.9545, which equals 95.45% for vacuum pressure.

The vacuum time is calculated as a percentage. Vacuum time is grouped into 5 second increments from 0 to 60 and assigned a number:

0 to < 5 seconds = 12
5 to < 10 seconds = 11
10 to < 15 seconds = 10
15 to < 20 seconds = 9
20 to < 25 seconds = 8
25 to < 30 seconds = 7
30 to < 35 seconds = 6
35 to < 40 seconds = 5
40 to < 45 seconds = 4
45 to < 50 seconds = 3
50 to < 55 seconds = 2
55 to < 60 seconds = 1
60 and greater = 0

The assigned number is divided by 12, to develop a percentage based on the assigned number from 0-12 as shown in the list. For example, a vacuum time of 9.95 seconds is assigned an 11, divided by 12 is 0.9166, which equals 91.66% for vacuum time.

The condition of parts is calculated as a percentage. The hose and nozzle are rated on a scale of 0 to 3: 0 absent, 1 needs repair, 2 worn, 3 excellent. The two readings are averaged and divided by 3. For example, if the nozzle was rated as a 2 and the hose rated as a 3, the average is 2.5 divided by 3 is 0.8333, which equals 83.33% for condition of parts.

The three percentages from vacuum pressure, vacuum time, and condition of parts are then averaged together. For example, the average of the three percentages above is 90.15%. This percentage indicates the likelihood that a boater will have a successful experience at the pump. We will define this concept as “usability percentage” in the tables to follow.

This report analyzes the data from the four monitoring efforts in 2019.

Each section includes a map of the region, table of usability percentages and pump type, and table of monitoring details. Monitoring details include facility information, indication of which unit (if multiple units), unit status, and in some cases, notes. An "Operational" status indicates that the unit was operational and accessible during the four monitoring efforts. If a unit was non-operational or non-accessible during one or more monitoring effort(s), the month of the monitoring effort will be indicated.

In some instances, a unit's analysis is determined based on less than four monitoring efforts or less parameters. In these instances, an asterisk (*) is placed next to the percentage and an explanation is provided under monitoring details.

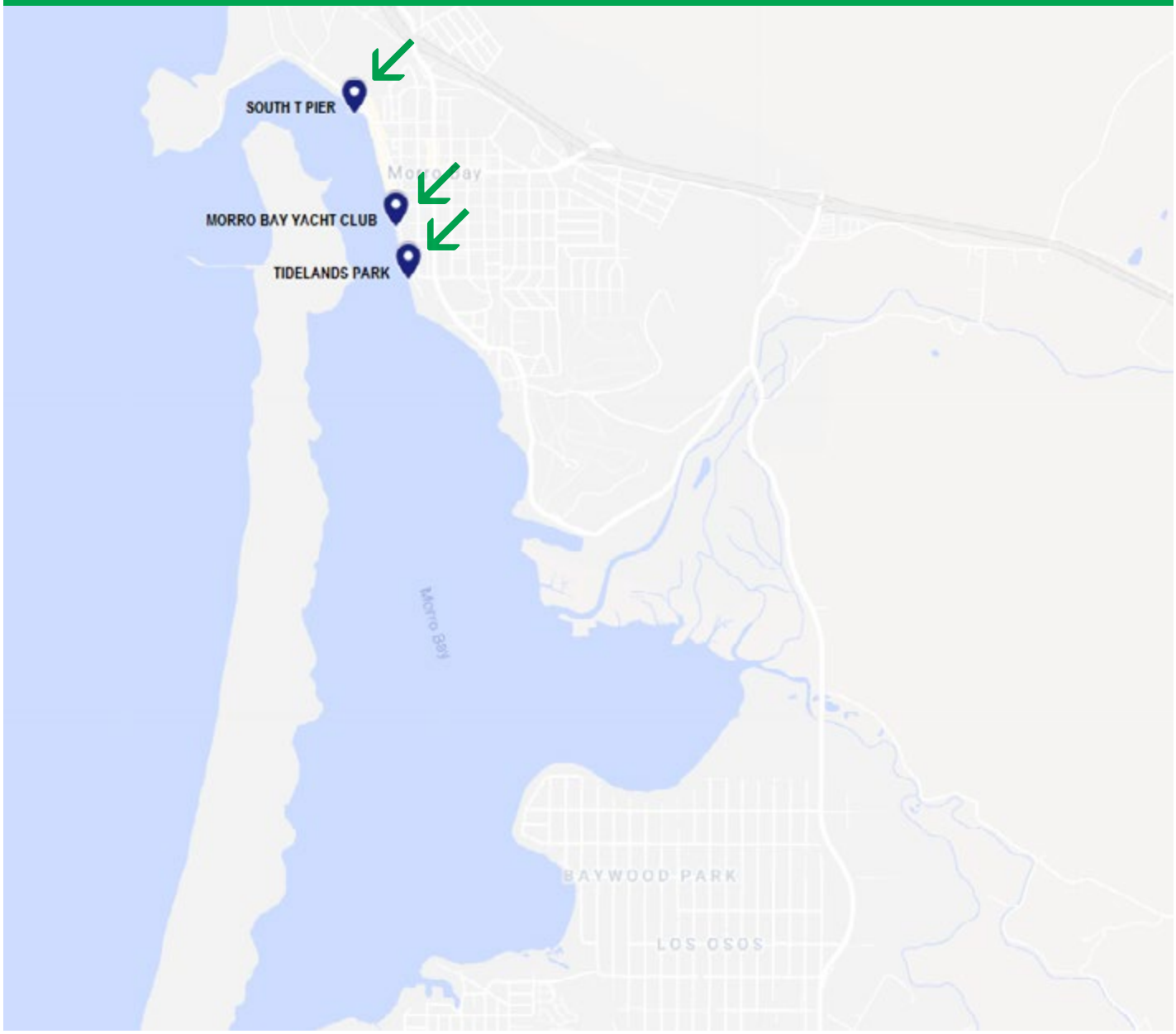
SAN LUIS OBISPO COUNTY

A lovely sunset by the water's edge featuring Morro Bay moorings. Photo by Victoria Gambale

SAN LUIS OBISPO COUNTY IS HOME TO ONE HARBOR

SAN LUIS OBISPO — MORRO BAY

SAN LUIS OBISPO — MORRO BAY



FACILITY	2019 USABILITY %	PUMP TYPE
Morro Bay Yacht Club	*73	Peristaltic
South T Pier	*79	Diaphragm
Tidelands Park	*72	Peristaltic

*See Note under Monitoring Details.

SAN LUIS OBISPO — MORRO BAY

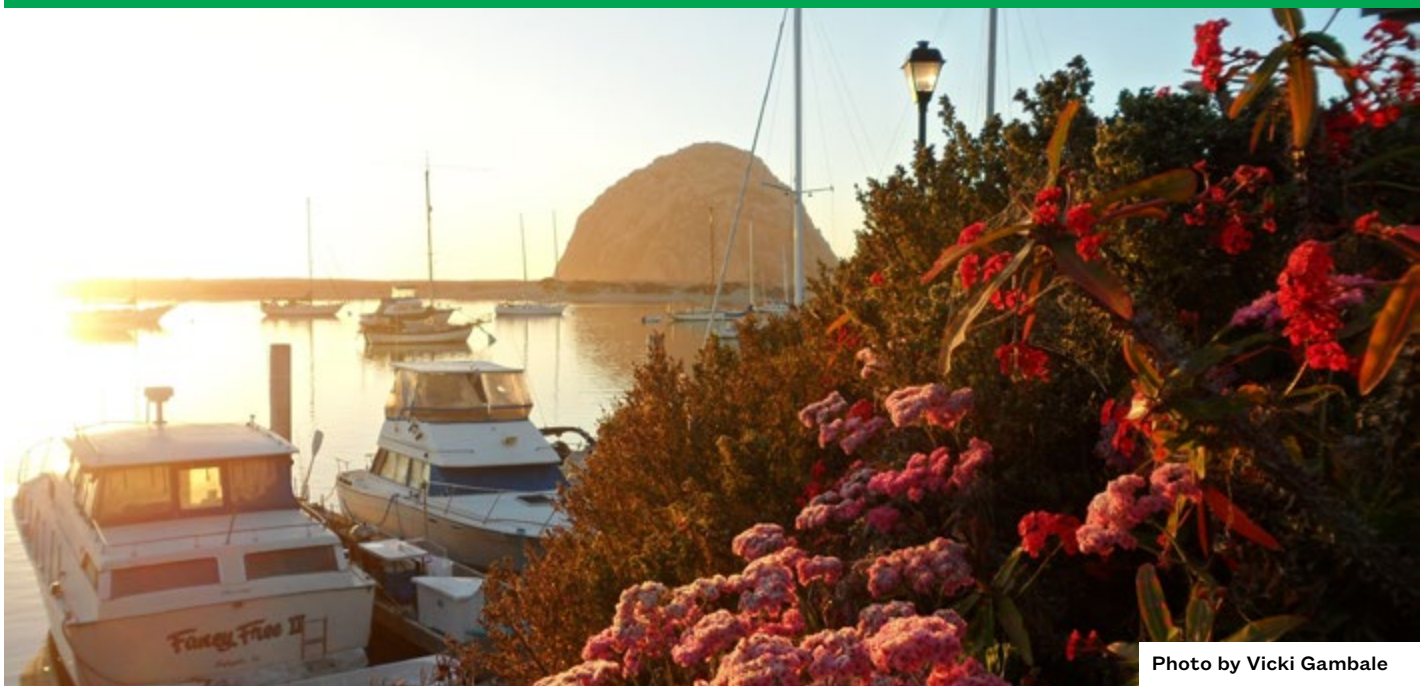


Photo by Vicki Gambale

⟶ MONITORING DETAILS

FACILITY	STATUS
Morro Bay Yacht Club	Operational
South T Pier	Operational
Tidelands Park	Operational
**Note*	*Morro Bay monitoring effort began in May. Therefore each usability % is based on three monitoring efforts.*

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SANTA BARBARA COUNTY

Santa Barbara Harbor features beautiful views from the Harbor Walkway. Photo by Victoria Gambale

SANTA BARBARA COUNTY IS HOME TO ONE HARBOR

SANTA BARBARA — SANTA BARBARA HARBOR

SANTA BARBARA — SANTA BARBARA HARBOR

FACILITY	2019 USABILITY %	PUMP TYPE
Boat Launch	97	Peristaltic
Fuel Dock	94	Peristaltic
Marina One, far/RS finger	88	Peristaltic
Marina One, mid/PQ finger	92	Peristaltic
Marina One, near/west	96	Peristaltic

SANTA BARBARA — SANTA BARBARA HARBOR

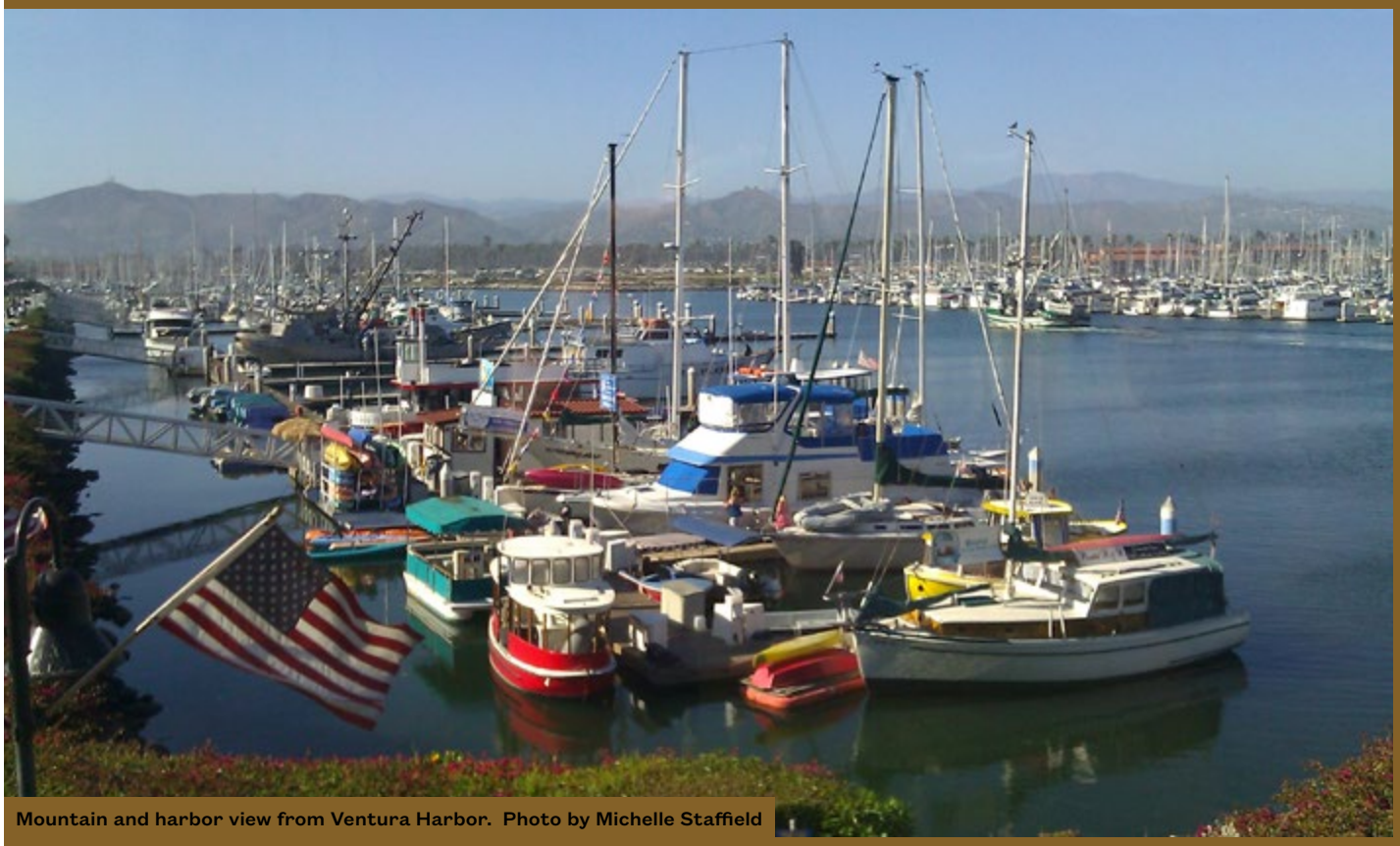
Photo by Vicki Gambale

⟶ MONITORING DETAILS

FACILITY	STATUS
Boat Launch	Operational
Fuel Dock	Operational
Marina One	
Far	Operational
Mid	Operational
Near	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

VENTURA COUNTY



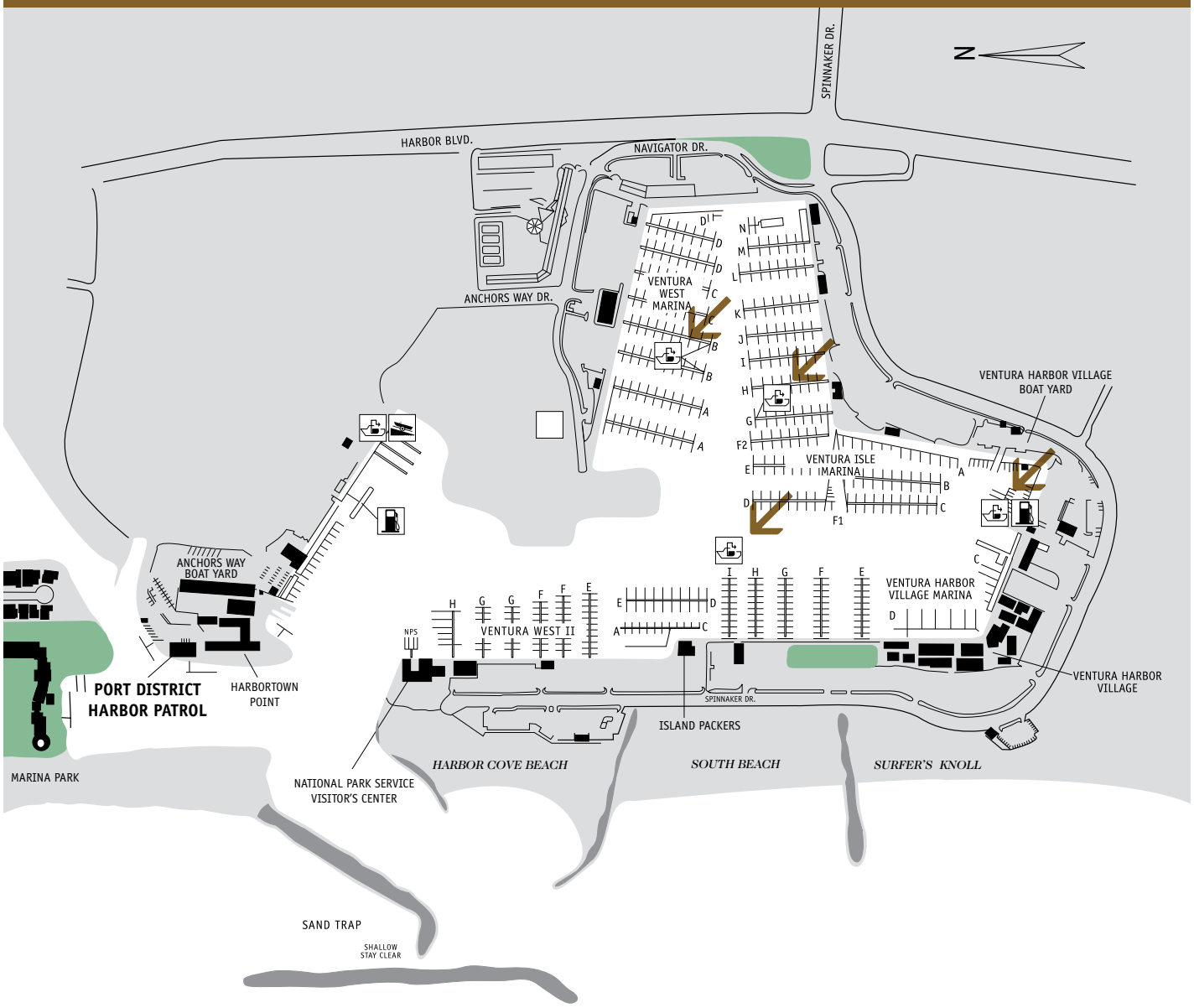
Mountain and harbor view from Ventura Harbor. Photo by Michelle Staffield

VENTURA COUNTY IS HOME TO TWO HARBORS

VENTURA — **VENTURA HARBOR**

VENTURA — **CHANNEL ISLANDS HARBOR**

VENTURA — VENTURA HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
Island Packers, I dock	71	Peristaltic
Ventura Harbor Marine Fuel, far	71	Diaphragm
Ventura Harbor Marine Fuel, near	68	Diaphragm
Ventura Isle Marina, G dock	83	Diaphragm
Ventura West Marina, B dock left/east	88	Diaphragm
Ventura West Marina, B dock right/west	74	Diaphragm

VENTURA — VENTURA HARBOR

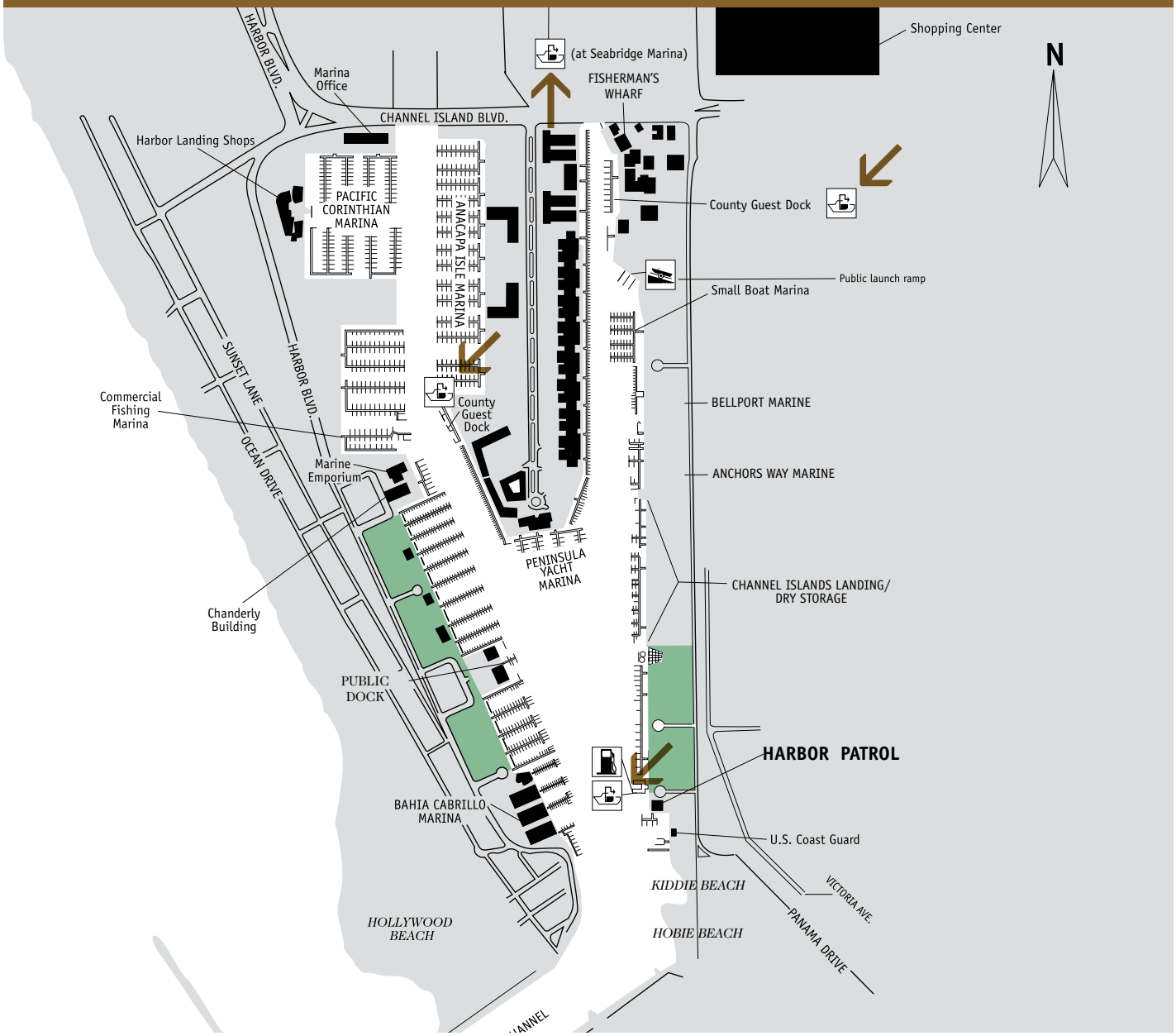
Photo by Kyle Sallee

⟶ MONITORING DETAILS

FACILITY	STATUS
Island Packers	Operational
Ventura Harbor Marine Fuel	
Far	Non-operational November
Near	Non-operational November
Ventura Isle Marina	Operational
Ventura West Marina	
B Dock Left Unit	Operational
B Dock Right Unit	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

VENTURA — CHANNEL ISLANDS HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
East Bank Guest Dock, far	96	Peristaltic
East Bank Guest Dock, near	81	Peristaltic
Harbor Patrol Dock	96	Peristaltic
Peninsula Park, County Guest Dock	94	Peristaltic
Seabridge Marina, F dock	73	Peristaltic

VENTURA — CHANNEL ISLANDS HARBOR

Photo by Michelle Staffield

⟶ MONITORING DETAILS

FACILITY	STATUS
East Bank Guest Dock	
Far	Operational
Near	Operational
Harbor Patrol Dock	Operational
Peninsula Park, County Guest Dock	Operational
Seabridge Marina	Non-operational February

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

LOS ANGELES COUNTY

Sea lions rest on a buoy just outside King Harbor. Photo by John Hollenbeck

LOS ANGELES COUNTY IS HOME TO FIVE HARBORS

LA — **MARINA DEL REY HARBOR**

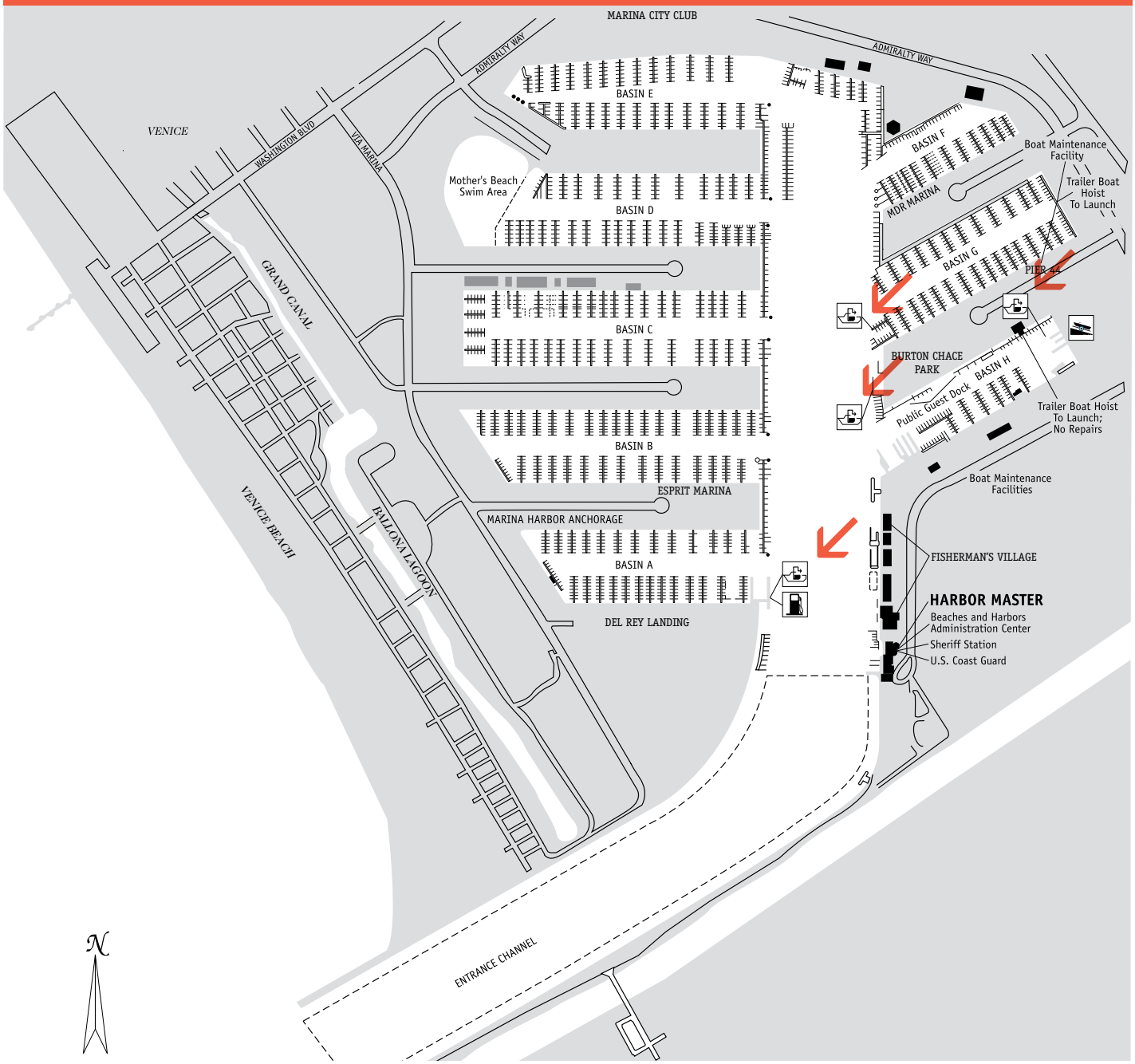
LA — **KING HARBOR**

LA — **PORT OF LOS ANGELES**

LA — **PORT OF LONG BEACH** / Shoreline

LA — **PORT OF LONG BEACH** / Los Alamitos

LA — MARINA DEL REY HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
Anchorage 47	28	Peristaltic
Burton Chase Park	*64	Peristaltic
Del Rey Landing, far	75	Peristaltic
Del Rey Landing, near	74	Peristaltic
Launch Ramp	88	Peristaltic

*See Note under Monitoring Details.

LA — MARINA DEL REY HARBOR

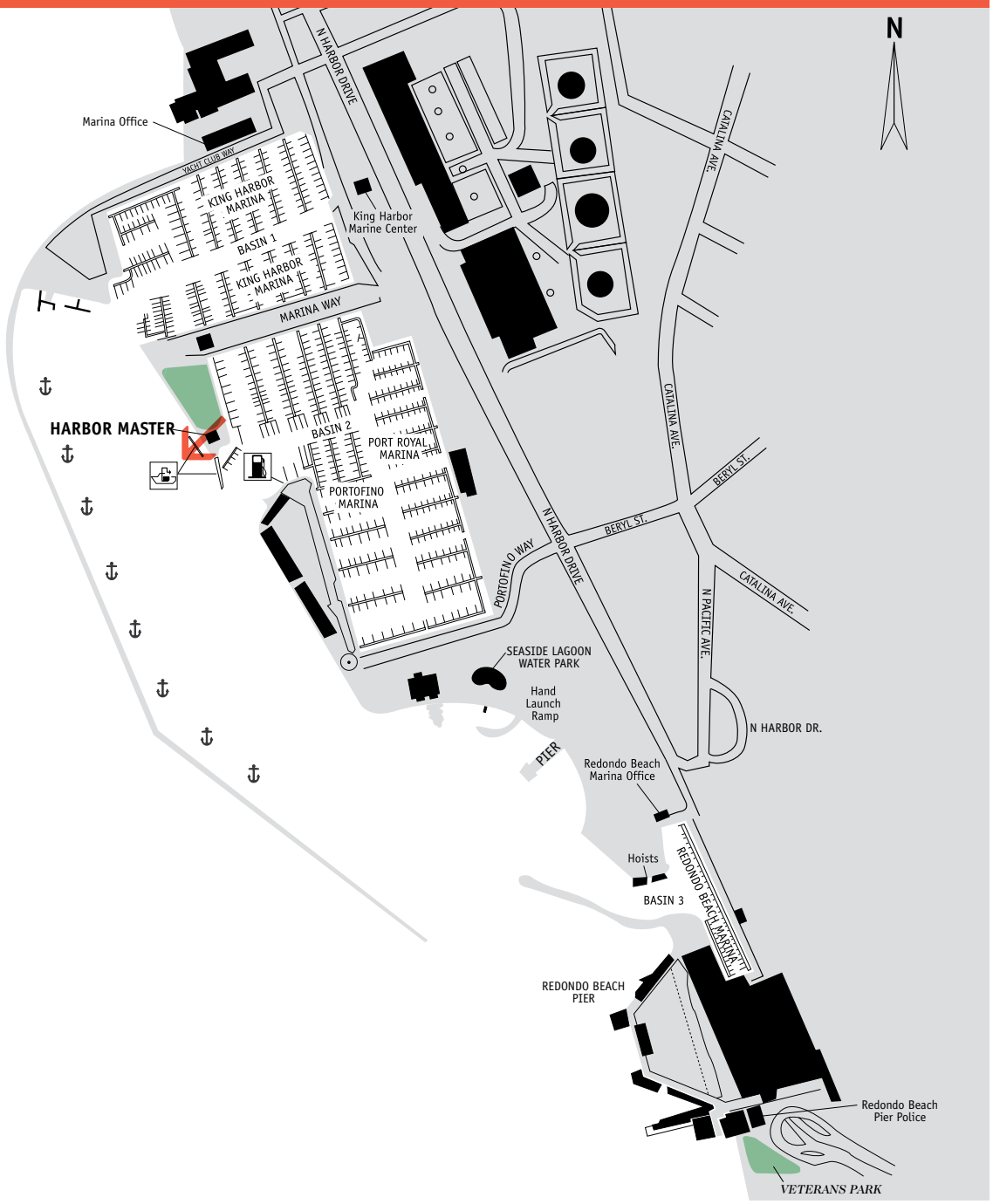
Photo by Thomas Poster

⟶ MONITORING DETAILS

FACILITY	STATUS
Anchorage 47	Non-operational August, November
Burton Chace Park	Non-accessible February Non-operational August
**Note*	*In February, unit was non-accessible. Therefore the usability % is based on three monitoring efforts.*
Del Rey Landing	
Far	Operational
Near	Operational
Launch Ramp	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

LA — KING HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
Harbor Patrol, small boat dock	96	Peristaltic

LA — KING HARBOR

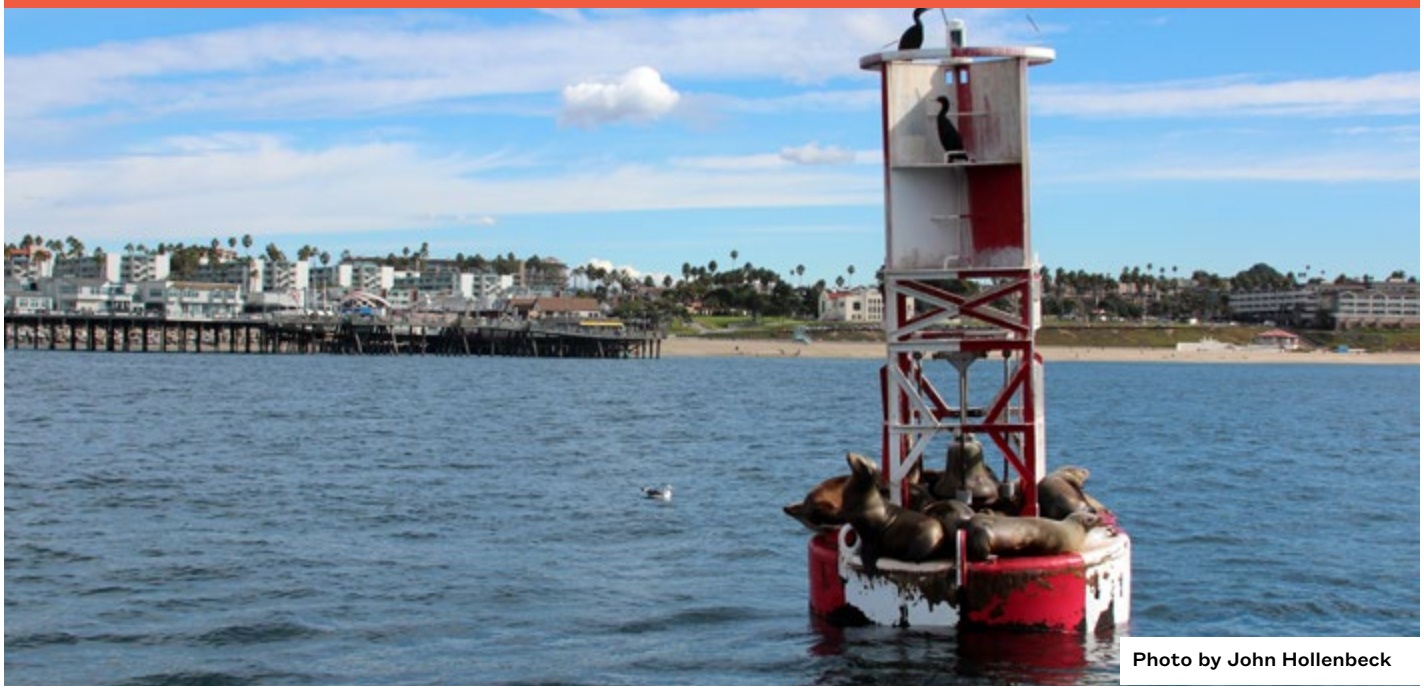


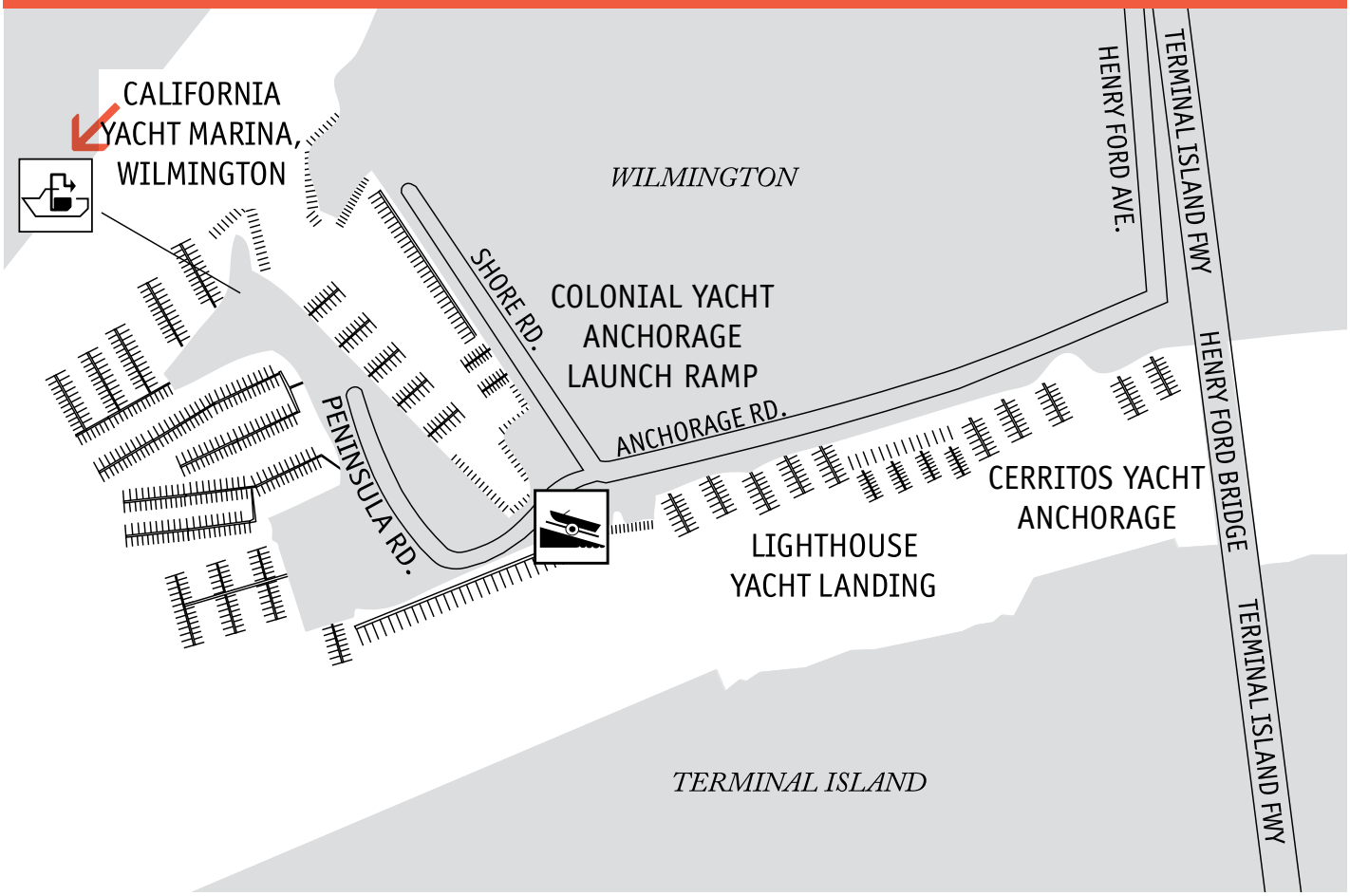
Photo by John Hollenbeck

⟶ MONITORING DETAILS

FACILITY	STATUS
Harbor Patrol	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

LA — PORT OF LOS ANGELES



FACILITY	2019 USABILITY %	PUMP TYPE
Cabrillo Way Marina	96	Diaphragm
California Yacht Marina, Wilmington, F dock	92	Peristaltic

LA — PORT OF LOS ANGELES

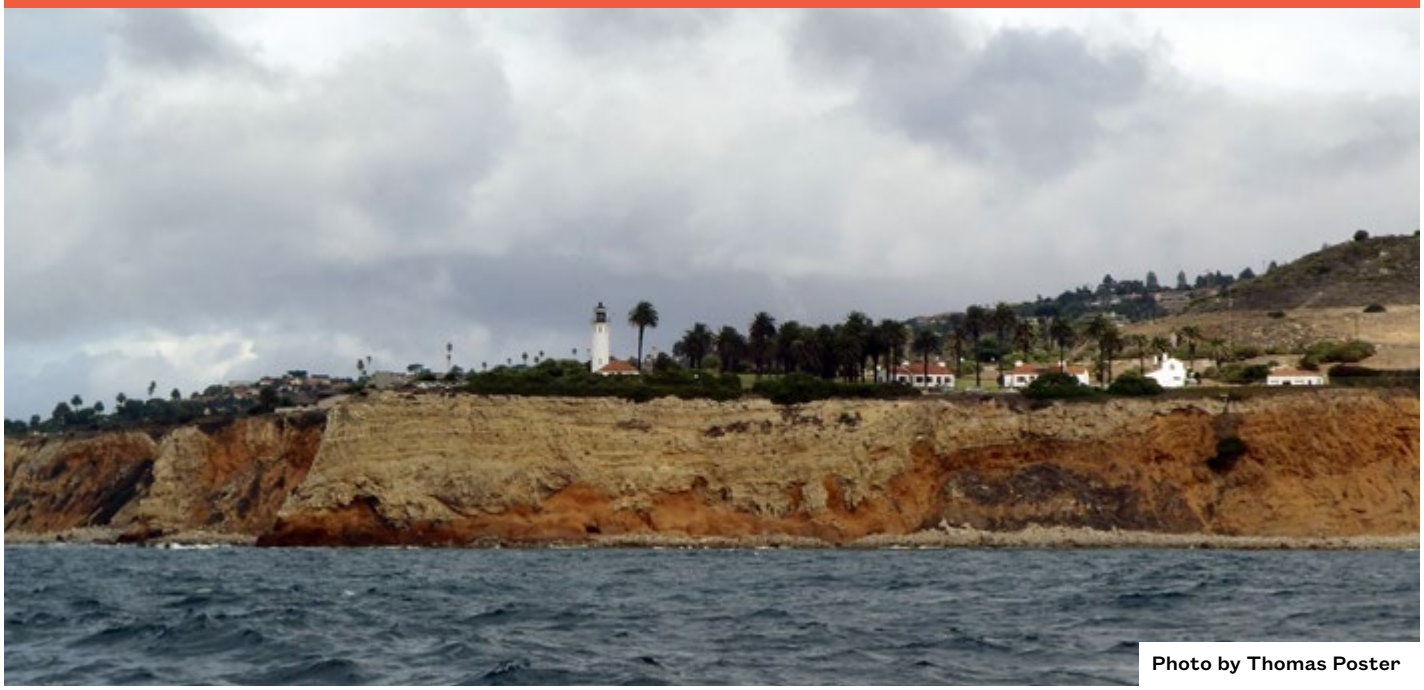


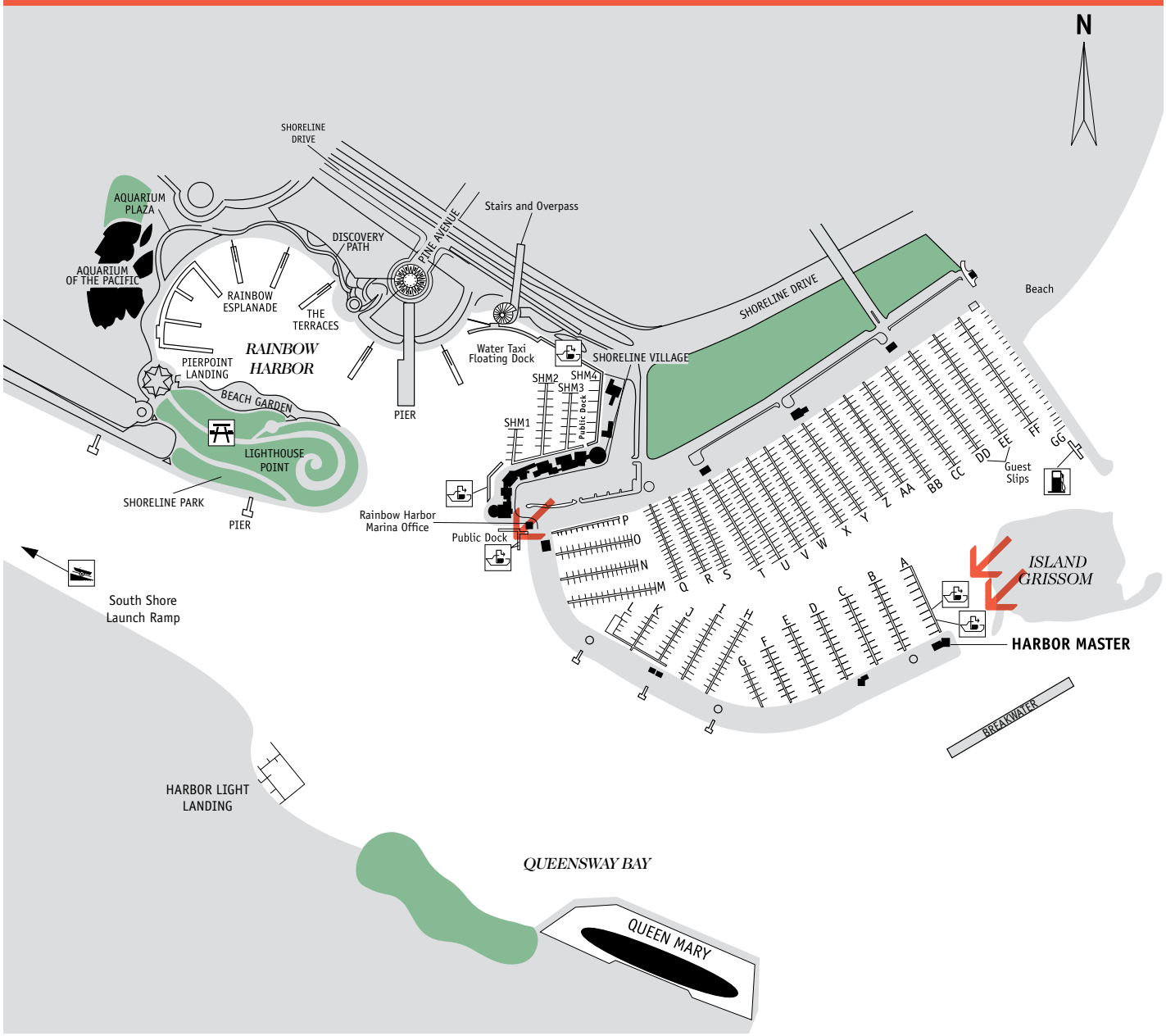
Photo by Thomas Poster

⟶ MONITORING DETAILS

FACILITY	STATUS
Cabrillo Way Marina	Operational
CYM Wilmington, F dock	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

LA — PORT OF LONG BEACH – SHORELINE



FACILITY	2019 USABILITY %	PUMP TYPE
Shoreline Marina Office, A dock far	95	Peristaltic
Shoreline Marina Office, A dock near	80	Peristaltic
Shoreline Marina, public dock far	89	Peristaltic
Shoreline Marina, public dock mid	86	Peristaltic
Shoreline Marina, public dock near	90	Peristaltic

LA — PORT OF LONG BEACH – SHORELINE

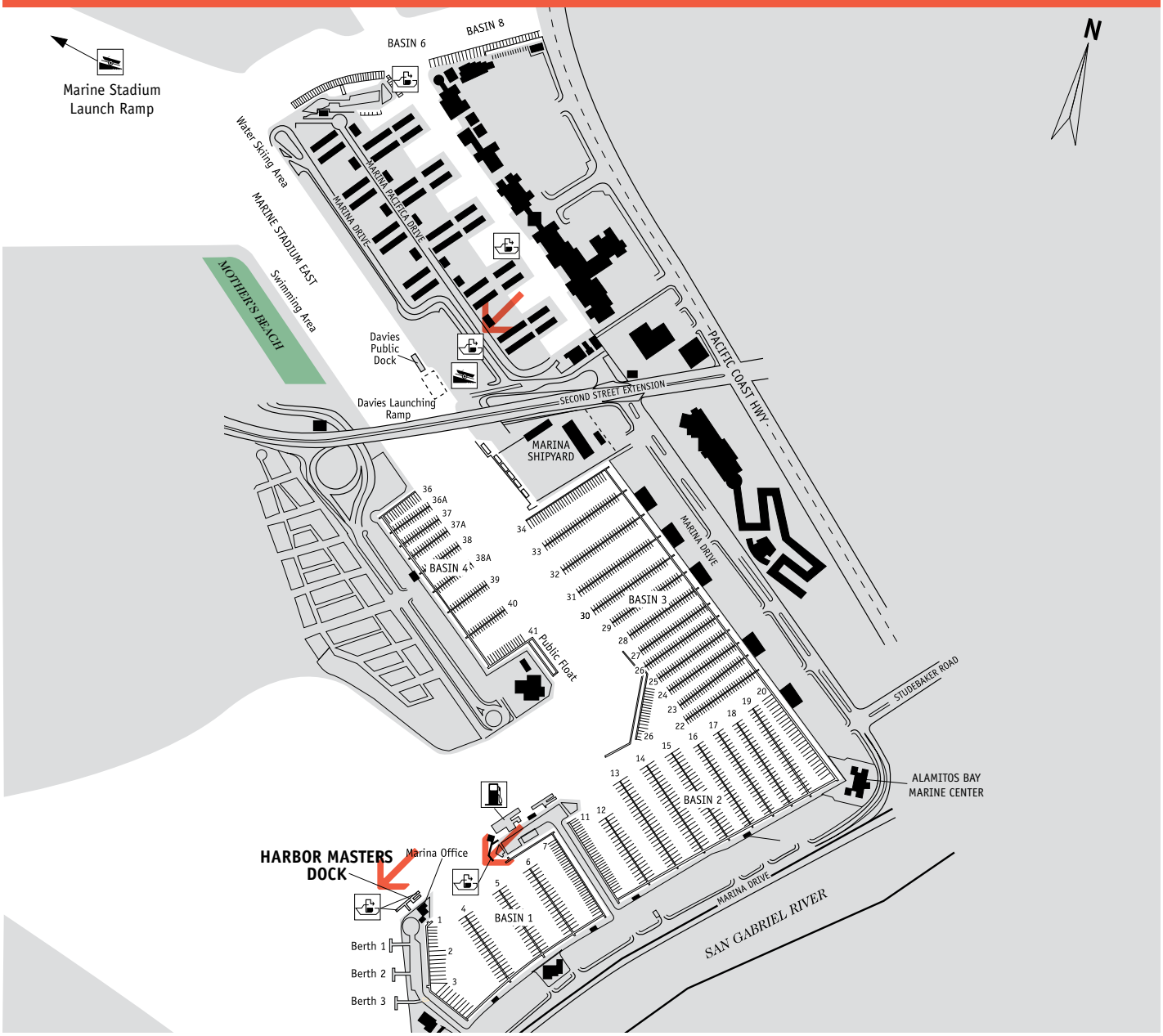
Photo by John Hollenbeck

⟶ MONITORING DETAILS

FACILITY	STATUS
Shoreline Marina Office	
Far	Operational
Near	Operational
Shoreline Marina, public dock	
Far	Operational
Mid	Operational
Near	Non-operational May, August

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

LA — PORT OF LONG BEACH – LOS ALAMITOS



FACILITY	2019 USABILITY %	PUMP TYPE
Los Alamitos Davies Launch Ramp	84	Peristaltic
Los Alamitos Fire Department, Marine Station	45	Peristaltic
Los Alamitos Harbor Master Dock, far	93	Peristaltic
Los Alamitos Harbor Master Dock, near	96	Peristaltic
Marina Pacifica, Slip #039 at Key 15	96	Peristaltic
Marina Pacifica, Slip #165 at Key 1	97	Peristaltic

LA — PORT OF LONG BEACH – LOS ALAMITOS

Photo by John Hollenbeck

⟶ MONITORING DETAILS

FACILITY	STATUS
Los Alamitos Davies Launch Ramp	Operational
Los Alamitos Fire Department, Marine Station	Non-operational August, November
Los Alamitos Harbor Master Dock	
Far	Operational
Near	Operational
Marina Pacifica	
Slip #039 at Key 15	Operational
Slip #165 at Key 1	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

ORANGE COUNTY

Clouds over Newport Harbor make for a picturesque scene. Photo by John Hollenbeck

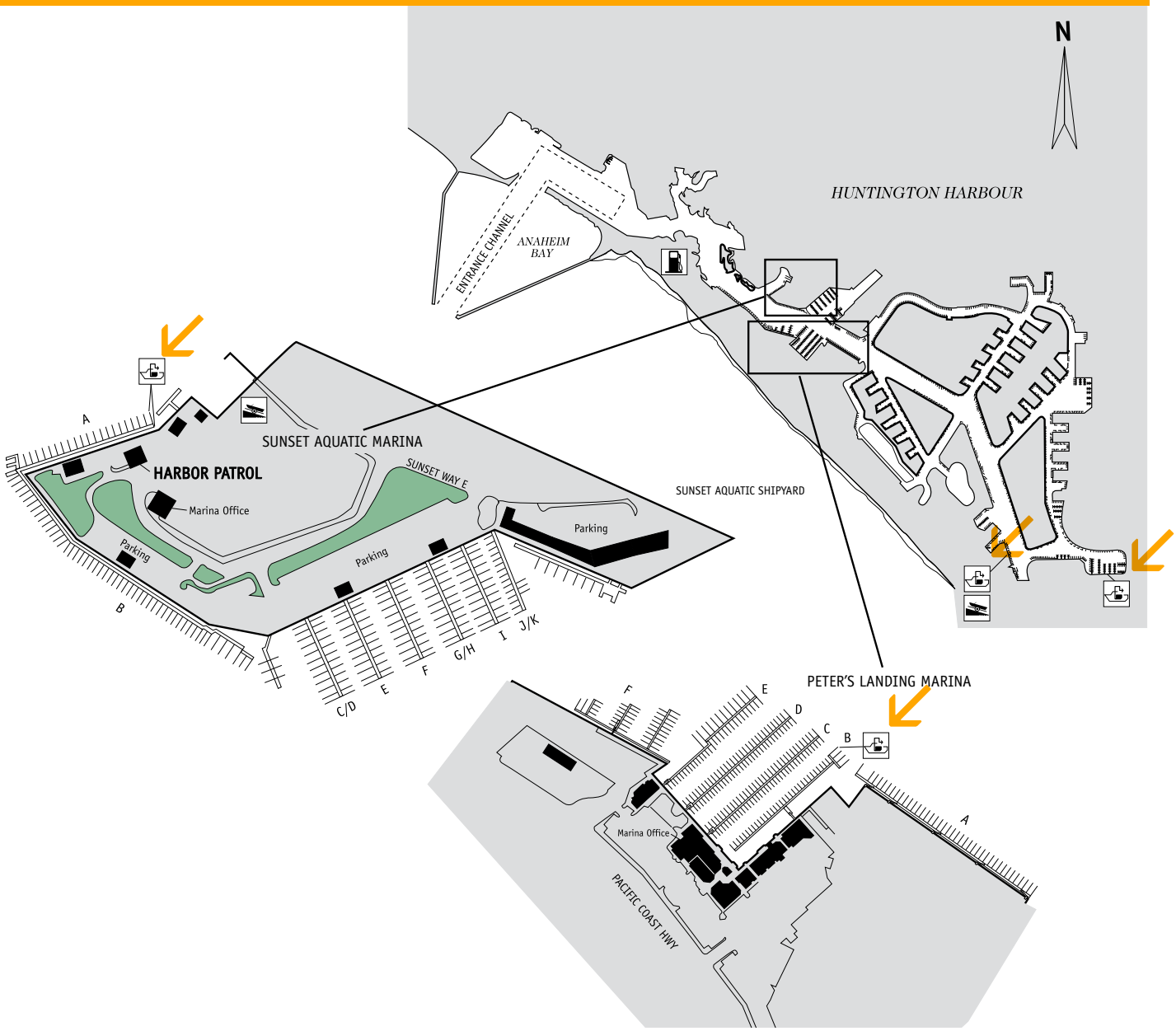
ORANGE COUNTY IS HOME TO THREE HARBORS

ORANGE — **HUNTINGTON HARBOUR**

ORANGE — **NEWPORT HARBOR**

ORANGE — **DANA POINT HARBOR**

ORANGE — HUNTINGTON HARBOUR



FACILITY	2019 USABILITY %	PUMP TYPE
Huntington Harbour Yacht Club, Fire Department	62	Diaphragm
Peter's Landing Marina, B dock	61	Peristaltic

ORANGE — HUNTINGTON HARBOUR

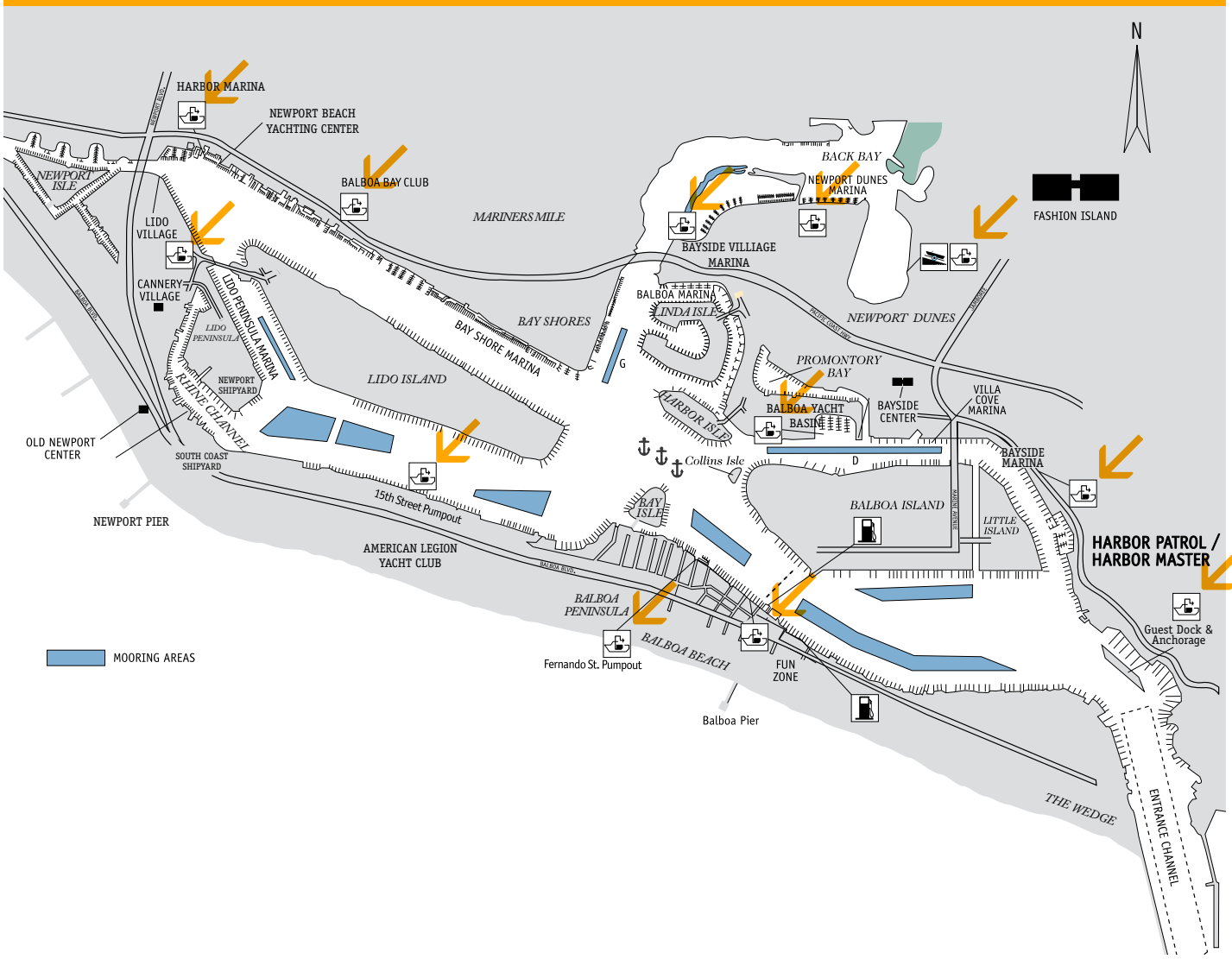
Photo by John Hollenbeck

⟶ MONITORING DETAILS

FACILITY	STATUS
Huntington Harbour Yacht Club, Fire Department	Operational
Peter's Landing Marina, B dock	Non-operational February

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

ORANGE — NEWPORT HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
15th Street, far	80	Diaphragm
15th Street, near	65	Peristaltic
Balboa Bay Club	*68	Peristaltic
Balboa Fun Zone	81	Peristaltic
Bayside Village Marina	94	Peristaltic
Balboa Yacht Basin, E dock	98	Peristaltic
Fernando St. & Edgewater, public dock	75	Peristaltic
Lido Marina Village	76	Peristaltic
OC Harbor Patrol	97	Peristaltic

*See Note under Monitoring Details.

ORANGE — NEWPORT HARBOR

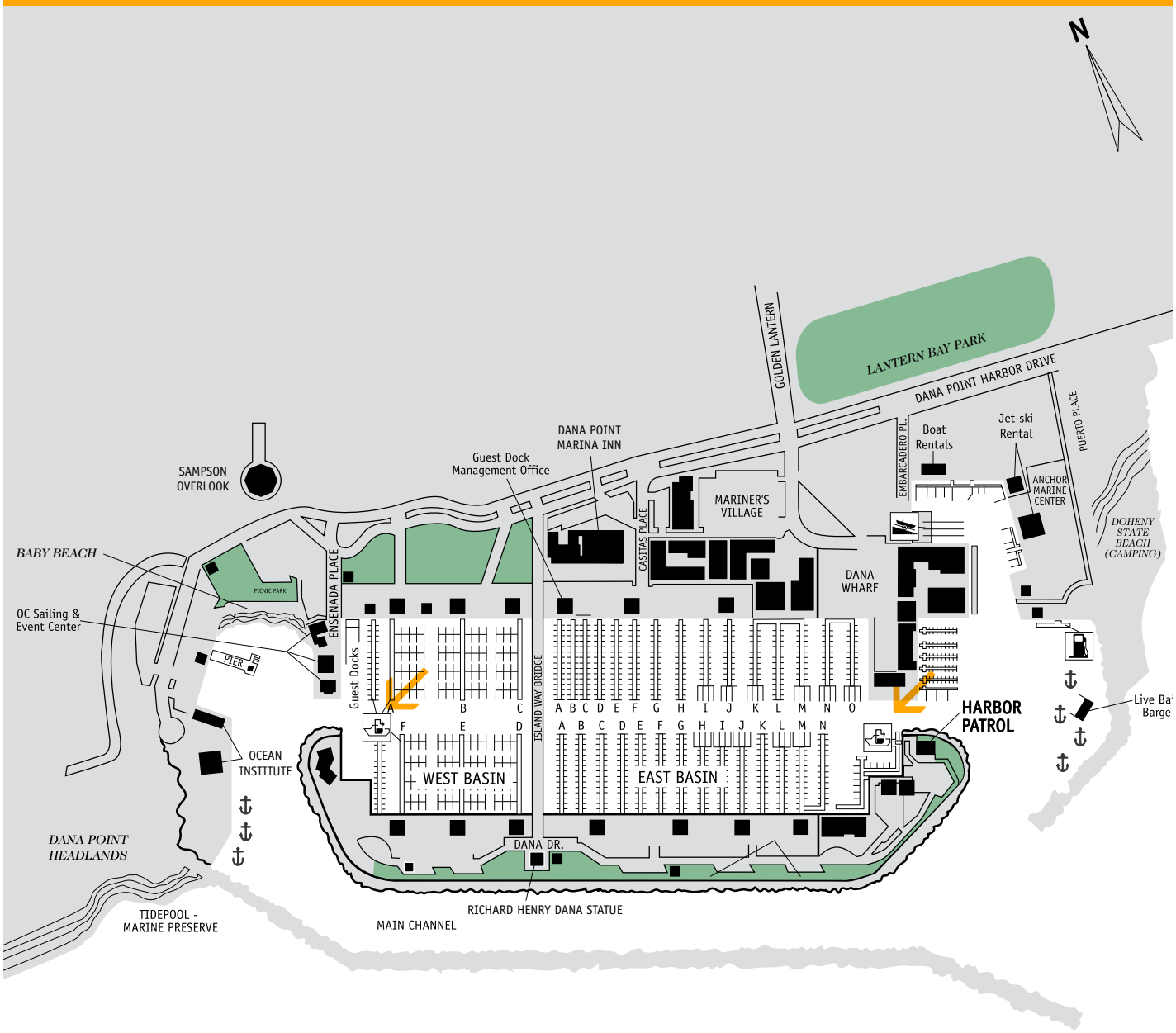
Photo by Jason Middlekauff

⟶ MONITORING DETAILS

FACILITY	STATUS
15th Street	
Far	Operational
Near	Non-operational November
Balboa Bay Club	Non-accessible May, August, November
**Note*	*Beginning in May, unit was non-accessible because it was being replaced with CVA funding. Therefore the usability % is based on one monitoring effort.*
Balboa Fun Zone	Operational
Bayside Village Marina	Operational
Balboa Yacht Basin, E dock	Operational
Fernando St. & Edgewater, public dock	Operational
Lido Marina Village	Operational
OC Harbor Patrol	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

ORANGE — DANA POINT HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
Dana West Basin, A dock side tie	91	Peristaltic
Dana West Basin, F dock end tie	98	Peristaltic
OC Dana Point Harbor, Guest Docks end tie	97	Peristaltic
Sheriff's Harbor Patrol, pumpout dock	*93	Peristaltic

*See Note under Monitoring Details.

ORANGE — DANA POINT HARBOR

Photo by Pat Douglass

⟶ MONITORING DETAILS

FACILITY	STATUS
Dana West Basin, A dock	Operational
Dana West Basin, F dock	Operational
OC Guest Dock	Operational
Sheriff's Harbor Patrol	Non-accessible February
**Note*	*In February, unit was non-accessible. Therefore the usability % is based on three monitoring efforts.*

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN DIEGO COUNTY

A view of downtown San Diego. Photo by Kim Riley

SAN DIEGO COUNTY IS HOME TO THREE HARBORS

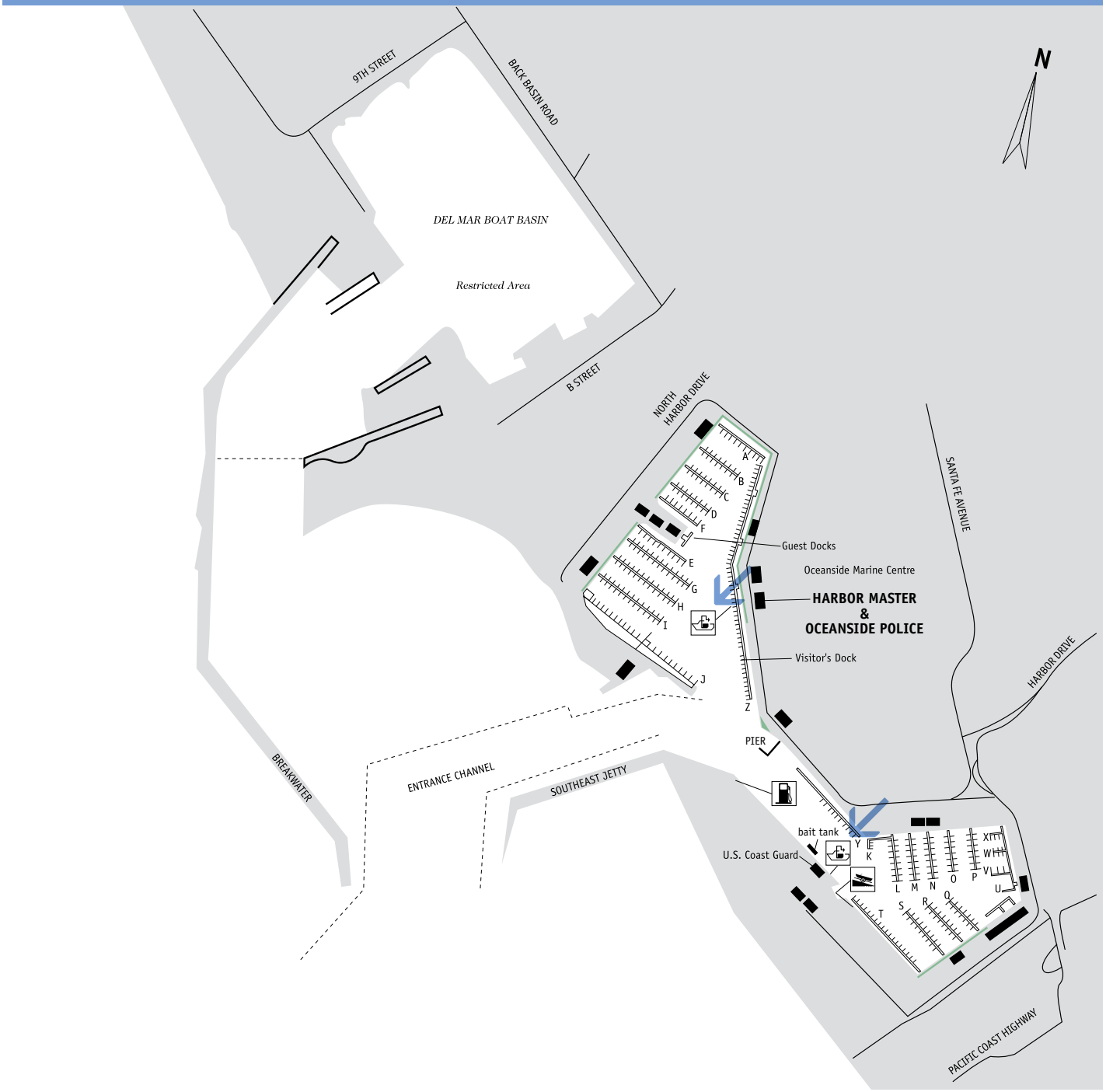
SAN DIEGO — **OCEANSIDE HARBOR**

SAN DIEGO — **MISSION BAY**

SAN DIEGO — **SAN DIEGO BAY**/ Shelter and Harbor Islands

SAN DIEGO — **SAN DIEGO BAY**/ Glorietta Bay & South San Diego Bay

SAN DIEGO — OCEANSIDE HARBOR



FACILITY	2019 USABILITY %	PUMP TYPE
Department of Harbor & Beaches Office	96	Peristaltic
US Coast Guard Auxiliary, far	97	Peristaltic
US Coast Guard Auxiliary, near	100	Peristaltic

SAN DIEGO — OCEANSIDE HARBOR

Photo by Grace Lee

⟶ MONITORING DETAILS

FACILITY	DESCRIPTION
Department of Harbor & Beaches	Operational
US Coast Guard Auxiliary	
Far	Operational
Near	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN DIEGO — MISSION BAY

FACILITY	2019 USABILITY %	PUMP TYPE
Hyatt Regency, Mission Bay	74	Peristaltic
Mission Bay Park Headquarters, left	66	Peristaltic
Mission Bay Park Headquarters, right	73	Peristaltic

SAN DIEGO — MISSION BAY

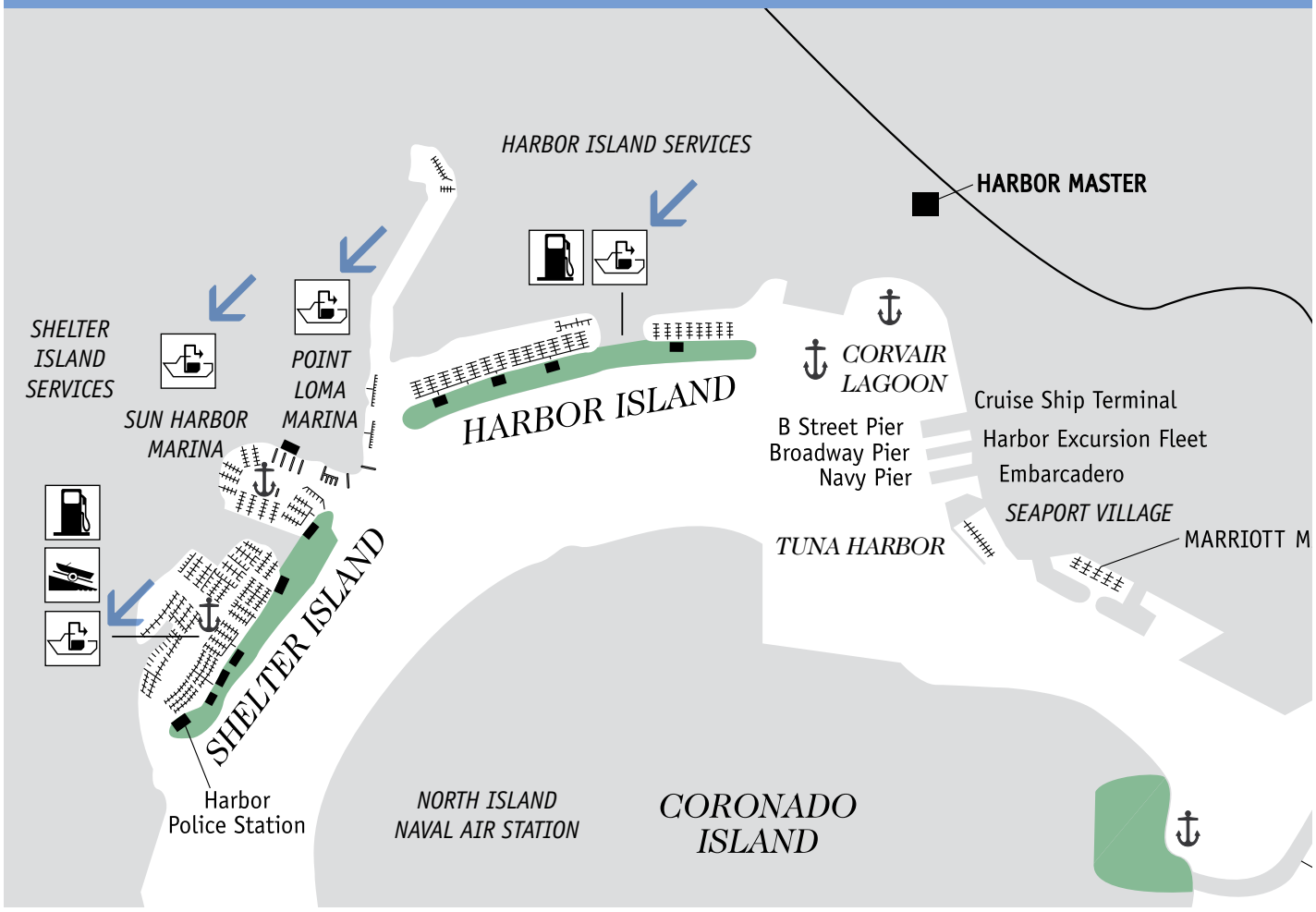
Photo by Lee Louis

⟶ MONITORING DETAILS

FACILITY	STATUS
Hyatt Regency	Non-operational February
Mission Bay Park Headquarters	
Left	Non-operational February
Right	Non-operational February

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN DIEGO — SAN DIEGO BAY/ Shelter and Harbor Islands



FACILITY	2019 USABILITY %	PUMP TYPE
Cabrillo Isle Marina, G Dock	69	Peristaltic
Laurel St. & Harbor Dr. / airport	92	Peristaltic
Shelter Island Harbor Police Dock, far	40	Diaphragm
Shelter Island Harbor Police Dock, near	66	Diaphragm
Shelter Island Public Dock, far	91	Peristaltic
Shelter Island Public Dock, near	92	Peristaltic
Sun Harbor Marina, far	*97	Peristaltic
Sun Harbor Marina, near	*96	Peristaltic

*See Note under Monitoring Details.

SAN DIEGO — SAN DIEGO BAY/ Shelter and Harbor Islands

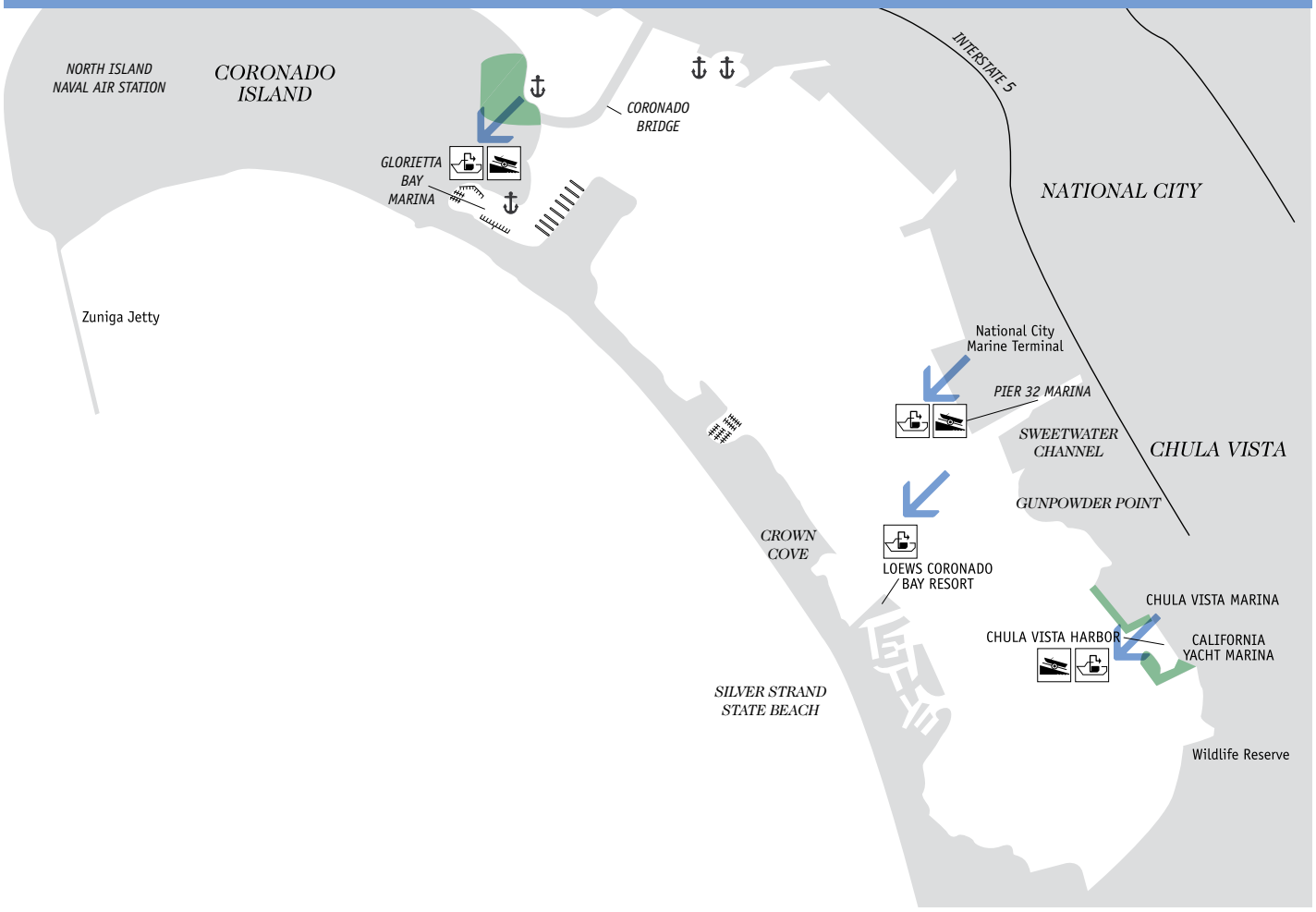
Photo by Kim Riley

⟶ MONITORING DETAILS

FACILITY	STATUS
Cabrillo Isle Marina	Non-operational February
Laurel St. & Harbor Dr.	Operational
Shelter Island Harbor Police Dock	
Far	Non-operational November
Near	Operational
Shelter Island Public Dock	
Far	Operational
Near	Operational
Sun Harbor Marina	
Far	Operational
**Note*	*New stanchion was installed with CVA funding. Therefore the usability % is based on one monitoring effort.*
Near	Operational
**Note*	*In February, unit was non-accessible because its motor was being replaced with CVA funding. Therefore the usability % is based on three monitoring efforts.*

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN DIEGO — SAN DIEGO BAY/ Glorietta Bay & South San Diego



FACILITY	2019 USABILITY %	PUMP TYPE
Chula Vista Launch Ramp	96	Peristaltic
Chula Vista Marina, A dock	85	Peristaltic
Glorietta Bay Marina, A dock	67	Peristaltic
Glorietta Bay Marina, B dock left	82	Peristaltic
Glorietta Bay Marina, B dock right	85	Peristaltic
Pepper Park Launch Ramp	99	Peristaltic

SAN DIEGO — SAN DIEGO BAY/ Glorietta Bay & South San Diego

Photo by Kim Riley

⟶ MONITORING DETAILS

FACILITY	STATUS
Chula Vista Launch Ramp	Operational
Chula Vista Marina	Operational
Glorietta Bay Marina	
A dock	Operational
B dock left	Operational
B dock right	Operational
Pepper Park Launch Ramp	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN FRANCISCO BAY — NORTH BAY

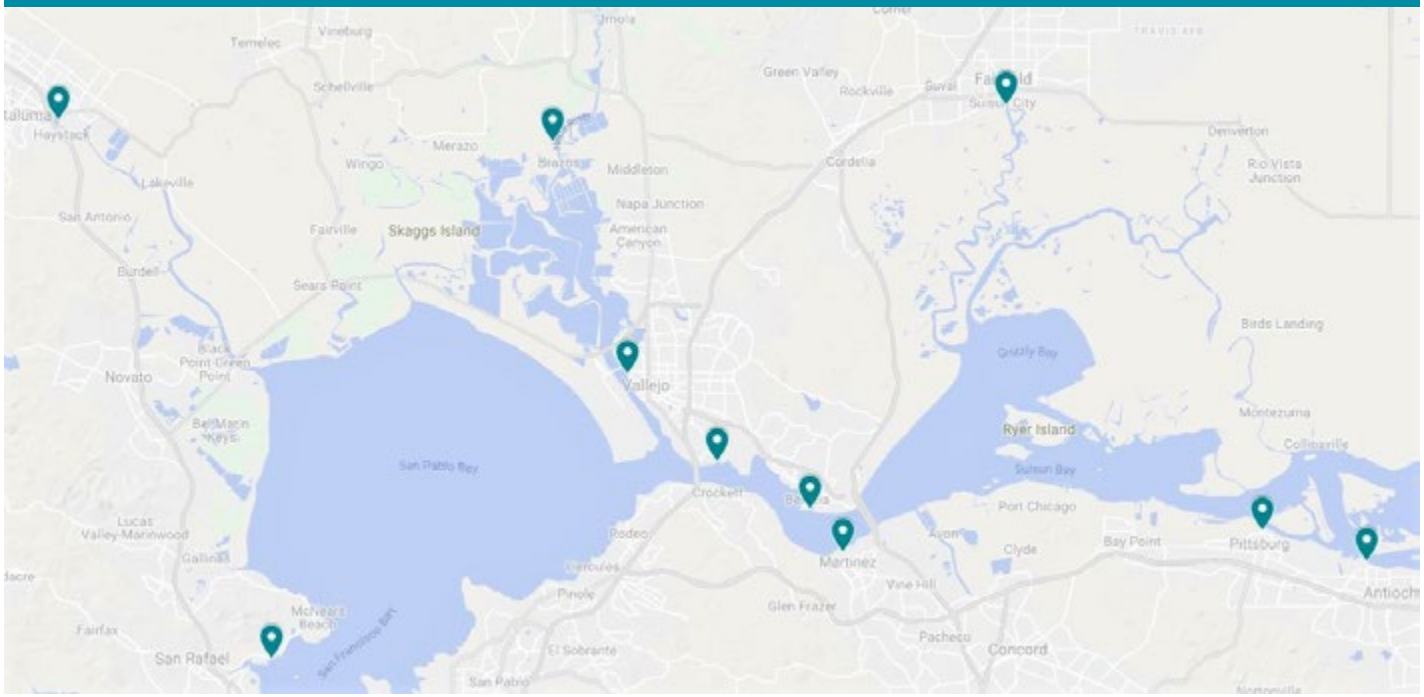
Photo by Adrien Baudrimont

SAN FRANCSICO BAY'S NORTHERN REGION HOUSES TEN MARINAS

SAN FRANCSICO — NORTH BAY

Antioch Marina
Benicia Marina
Glen Cove Marina
Loch Lomond Marina
Martinez Marina
Napa Valley Marina
Petaluma Marina
Pittsburg Marina
Suisun City Marina
Vallejo Municipal Marina

SAN FRANCISCO — NORTH BAY



FACILITY	2019 USABILITY %	PUMP TYPE
Antioch, Guest Dock	83	Vacuum
Benicia	87	Peristaltic
Glen Cove	94	Peristaltic
Loch Lomond, Fuel Dock (north)	53	Peristaltic
Loch Lomond, Fuel Dock (south)	46	Peristaltic
Martinez	85	Peristaltic
Napa Valley	84	Custom Build
Petaluma	*61	Diaphragm
Pittsburg, Fuel Dock (north)	94	Peristaltic
Pittsburg, Fuel Dock (south)	93	Peristaltic
Pittsburg, Guest Dock	92	Peristaltic
Suisun City	67	Peristaltic
Vallejo, J Dock	90	Peristaltic
Vallejo, Fuel Dock	84	Peristaltic

*See Note under Monitoring Details.

SAN FRANCISCO — NORTH BAY

⟶ MONITORING DETAILS

FACILITY	STATUS
Antioch, Guest Dock	Operational
Benicia	Operational
Glen Cove	Operational
Loch Lomond, Fuel Dock (north) **Loch Lomond, Fuel Dock (south)**	Non-operational March Non-operational March
Martinez	Operational
Napa Valley	Operational
Petaluma	Non-accessible March, non-operational December
**Notes*	*In March, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Pittsburg, Fuel Dock (north) **Pittsburg, Fuel Dock (south)** **Pittsburg, Guest Dock**	Operational Operational Operational
Suisun City	Operational
Vallejo, J Dock **Vallejo, Fuel Dock**	Operational Operational

Photo by Adrien Baudrimont

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN FRANCISCO BAY — EAST BAY

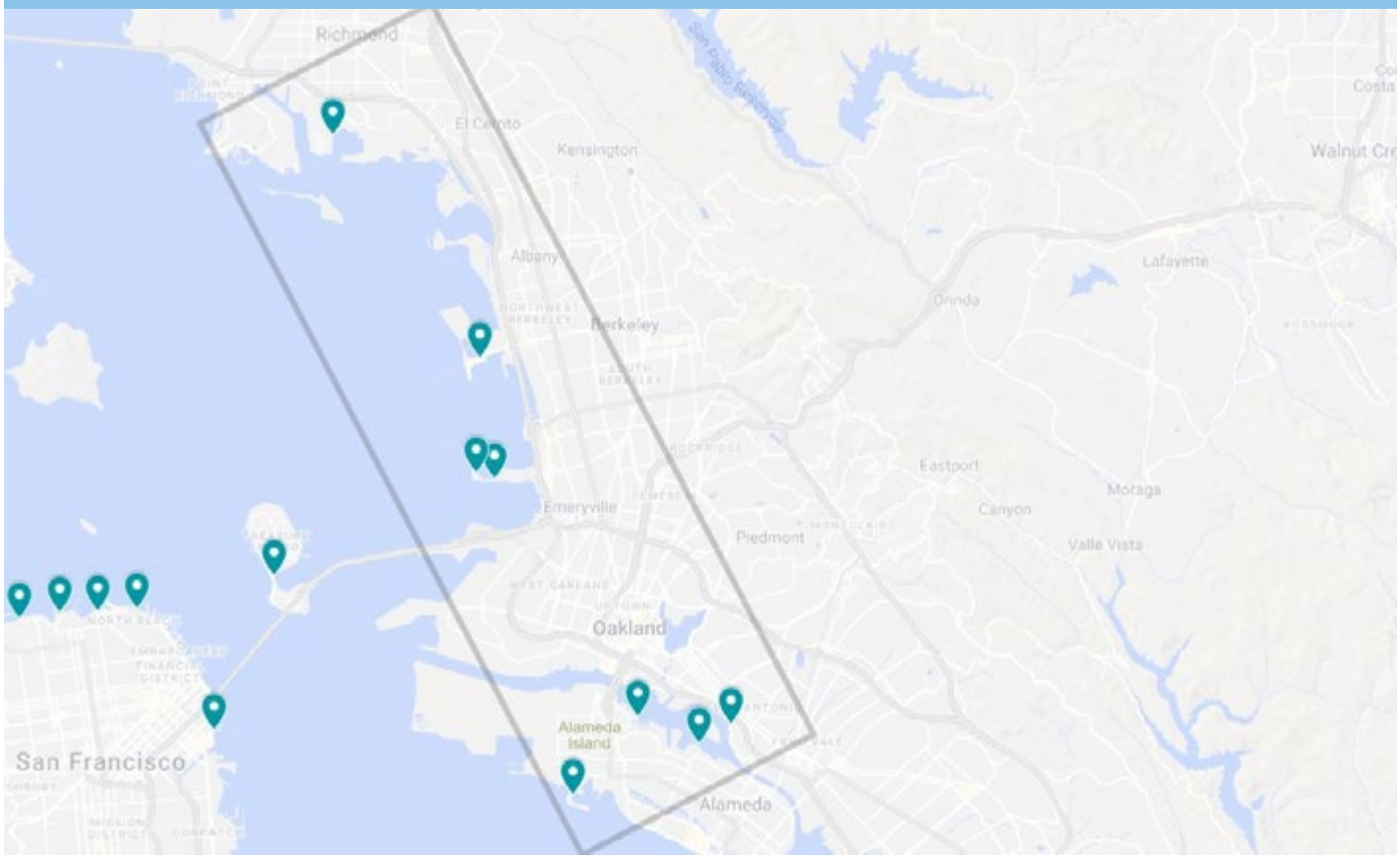
Photo by Liz Juvera

SAN FRANCSICO BAY'S EASTERN REGION HOUSES EIGHT MARINAS

SAN FRANCSICO — EAST BAY

Ballena Isle Marina
Berkeley Marina
Emery Cove Yacht Harbor
Emeryville Marina
Grand Marina
Marina Bay Yacht Harbor
Marina Village Yacht Harbor
Oakland Marina

SAN FRANCISCO — EAST BAY



FACILITY	2019 USABILITY %	PUMP TYPE
Ballena Isle Marina	87	Peristaltic
Berkeley Marina, G Dock	82	Peristaltic
Berkeley Marina, I Dock	76	Peristaltic
Berkeley Marina, C Dock (east)	93	Peristaltic
Berkeley Marina, C Dock (west)	78	Peristaltic
Emery Cove Yacht Harbor, A Dock	33	Peristaltic
Emery Cove Yacht Harbor, S Dock	33	Peristaltic
Emeryville Marina	84	Peristaltic
Grand Marina	91	Peristaltic
Marina Bay Yacht Harbor, D Dock	82	Peristaltic
Marina Bay Yacht Harbor, G Dock	77	Peristaltic
Marina Village Yacht Harbor, Gate 8	93	Peristaltic
Marina Village Yacht Harbor, Gate 10	92	Peristaltic
Oakland Marina, Jack London Square	38	Peristaltic

SAN FRANCISCO — EAST BAY

⟶ MONITORING DETAILS

FACILITY	STATUS
Ballena Isle Marina	Operational
Berkeley Marina, G Dock	Operational
Berkeley Marina, I Dock	Operational
Berkeley Marina, C Dock (east)	Operational
Berkeley Marina, C Dock (west)	Non-operational December
Emery Cove Yacht Harbor, A Dock	Non-operational all months
Emery Cove Yacht Harbor, S Dock	Non-operational all months
Emeryville Marina	Operational
Grand Marina	Operational
Marina Bay Yacht Harbor, D Dock	Operational
Marina Bay Yacht Harbor, G Dock	Operational
Marina Village Yacht Harbor, Gate 8	Operational
Marina Village Yacht Harbor, Gate 10	Operational
Oakland Marina, Jack London Square	Non-operational February, May, September

Photo by Natasha Dunn

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN FRANCISCO BAY – WEST BAY

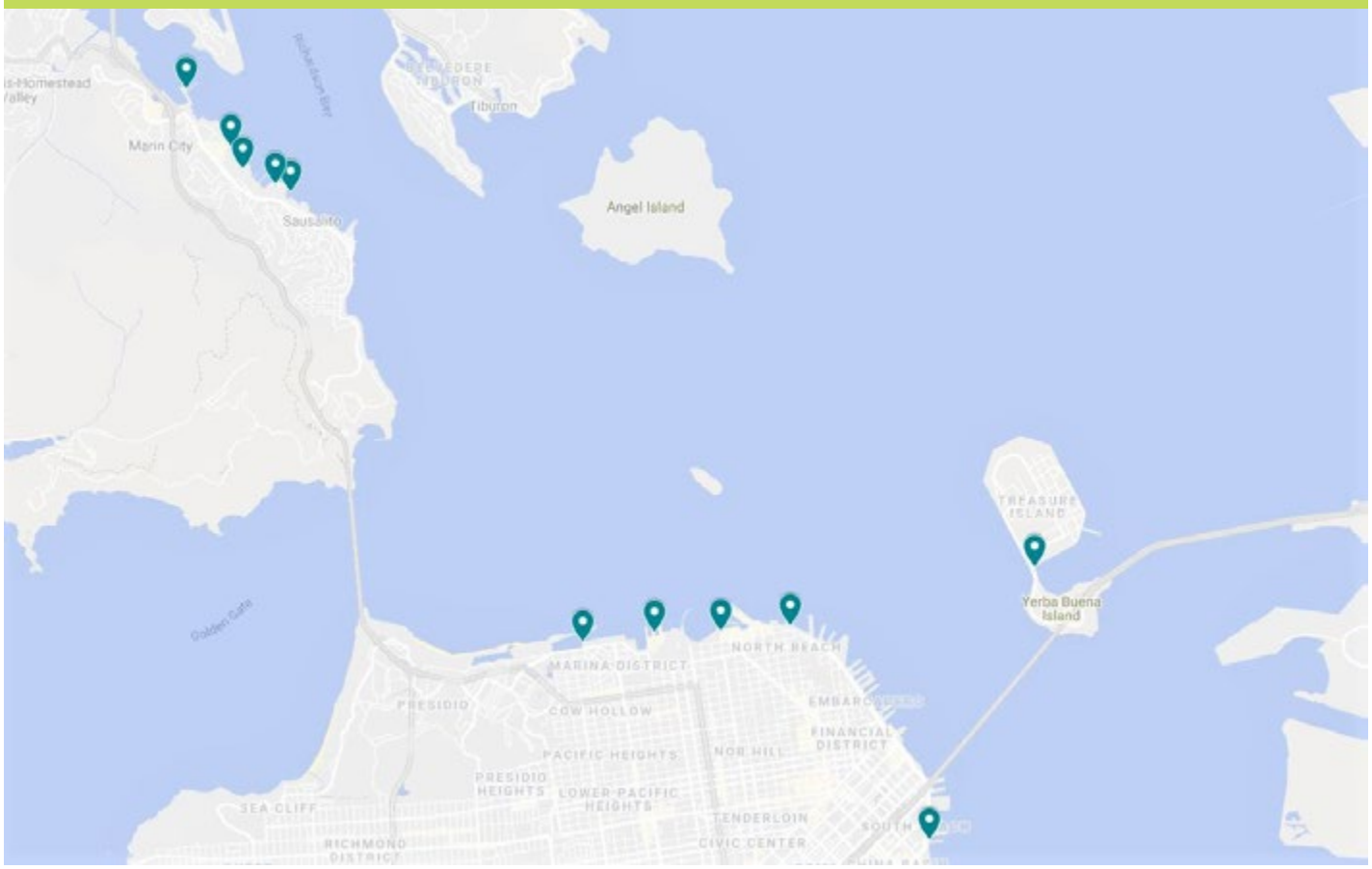
Photo by Adrien Baudrimont

SAN FRANCSICO BAY'S WESTERN REGION HOUSES ELEVEN MARINAS

SAN FRANCSICO — WEST BAY

Clipper Yacht Harbor
Fisherman's Wharf
Galilee Harbor
Marina Plaza Harbor
Pier 39 Marina
Richardson Bay Marina
San Francisco Marina - Gashouse Cove
San Francisco Marina - West Harbor
Schoonmaker Point Marina
South Beach Yacht Harbor
Treasure Island Marina

SAN FRANCISCO — WEST BAY



FACILITY	2019 USABILITY %	PUMP TYPE
Clipper Yacht Harbor	89	Peristaltic
Fisherman's Wharf	8	Peristaltic
Galilee Harbor	72	Diaphragm
Marina Plaza Harbor	21	Peristaltic
Pier 39 Marina	96	Peristaltic
Richardson Bay Marina	84	Peristaltic
San Francisco Marina, Gashouse Cove	68	Peristaltic
San Francisco Marina, West Harbor	90	Peristaltic
Schoonmaker Point Marina	*94	Peristaltic
South Beach Yacht Harbor, South Guest Dock	83	Peristaltic
Treasure Island Marina	68	Peristaltic

*See Note under Monitoring Details.

SAN FRANCISCO — WEST BAY

→ MONITORING DETAILS

FACILITY	STATUS
Clipper Yacht Harbor	Operational
Fisherman's Wharf	Non-operational all months
Galilee Harbor	Non-operational September
Marina Plaza Harbor	Non-operational March, June, September
Pier 39 Marina	Operational
Richardson Bay Marina	Operational
San Francisco Marina, Gashouse Cove **San Francisco Marina, West Harbor**	Non-operational June Operational
Schoonmaker Point Marina	Non-accessible March
**Note*	*In March, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
South Beach Yacht Harbor (South Guest Dock)	Operational
Treasure Island Marina	Non-operational December

Photo by Adrien Baudrimont

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SAN FRANCISCO BAY – SOUTH BAY

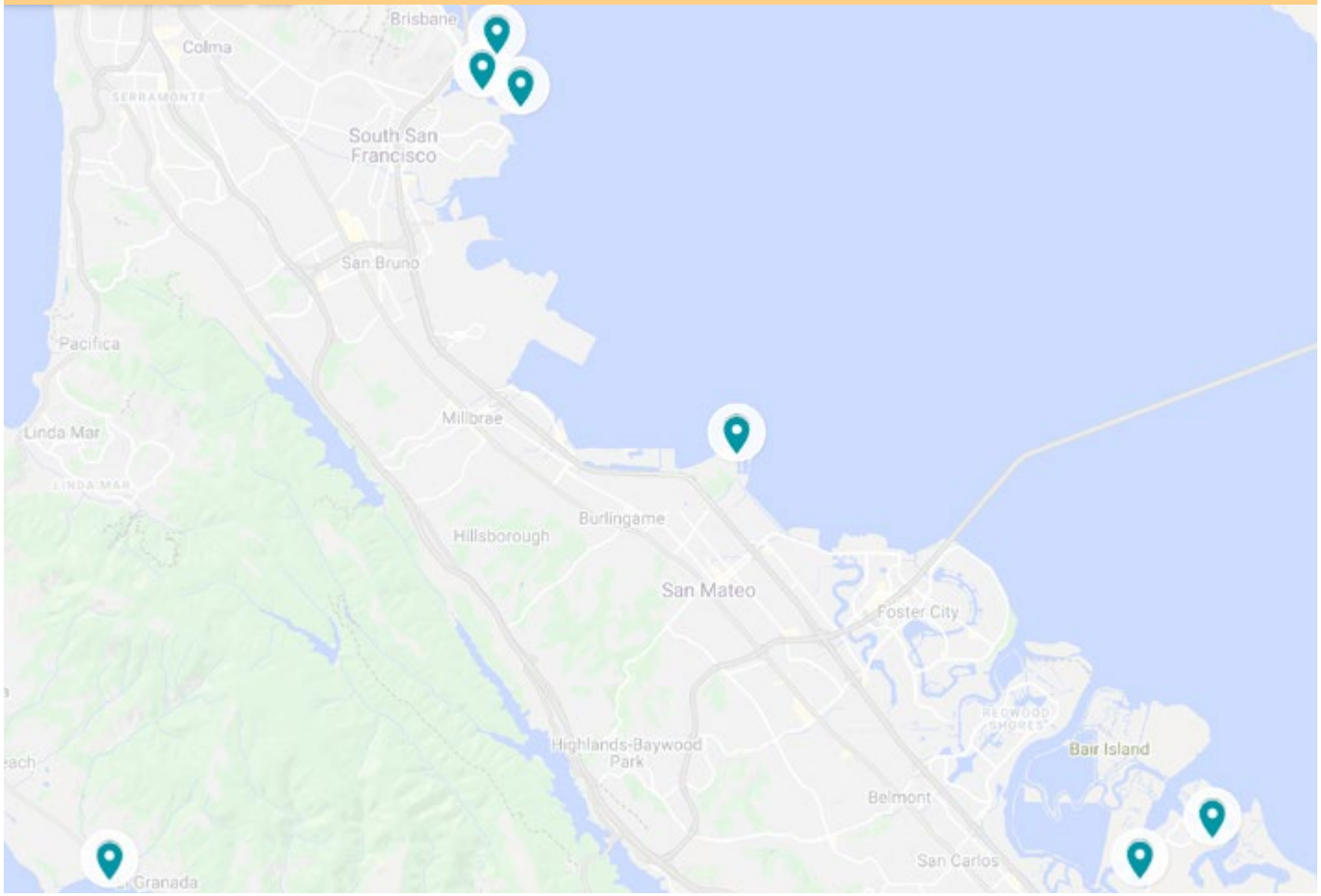
Photo by Adrien Baudrimont

SAN FRANCISCO'S SOUTHERN REGION INCLUDES SEVEN MARINAS

SAN FRANCSICO — SOUTH BAY

Brisbane Marina
Coyote Point Marina
Oyster Cove Marina
Oyster Point Marina
Pillar Point Marina
Port of Redwood City
West Point Harbor

SAN FRANCISCO — SOUTH BAY



FACILITY	2019 USABILITY %	PUMP TYPE
Brisbane Marina	86	Peristaltic
Coyote Point Marina	78	Peristaltic
Oyster Cove Marina	88	Peristaltic
Oyster Point Marina	67	Peristaltic
Pillar Point Marina	*83	Peristaltic
Port of Redwood City	94	Peristaltic
Westpoint Harbor	91	Peristaltic

*See Note under Monitoring Details.

SAN FRANCISCO — SOUTH BAY

Photo by Adrien Baudrimont

⟶ MONITORING DETAILS

FACILITY	STATUS
Brisbane Marina	Non-operational December
Coyote Point Marina	Non-operational December
Oyster Cove Marina	Operational
Oyster Point Marina	Operational
Pillar Point Marina	Non-accessible March
**Note*	*In March, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Port of Redwood City	Operational
Westpoint Harbor	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SACRAMENTO-SAN JOAQUIN RIVER DELTA – NORTH DELTA

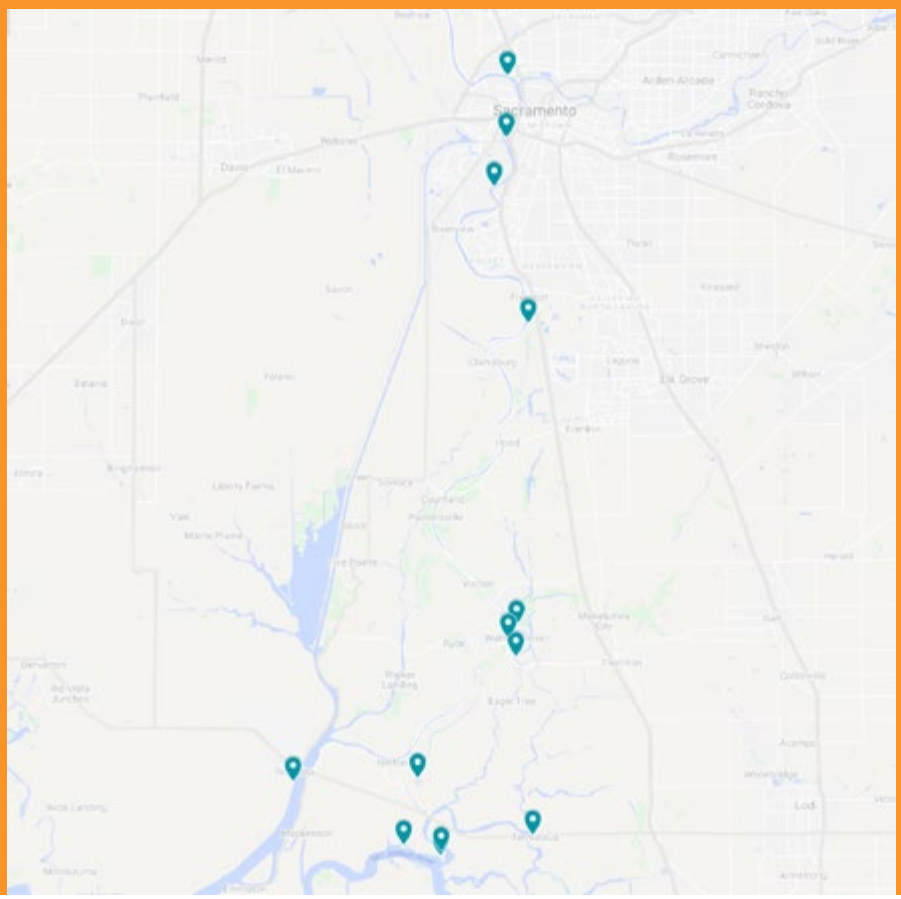
Photo by Natasha Dunn

THE SACRAMENTO-SAN JOAQUIN RIVER DELTA NORTH REGION HOUSES THIRTEEN MARINAS

SACRAMENTO & SAN JOAQUIN RIVER DELTA — NORTH DELTA

Boathouse Marina
Cliff's Marina
Dagmar's Landing
Delta Marina Yacht Harbor
Korth's Pirate's Lair Marina
Oxbow Marina
Riverbank Marina
Sacramento Delta Bay Marina
Sacramento Marina
Sherwood Harbor Marina
Tower Park Marina
Walnut Grove Marina
Willow Berm Marina

SACRAMENTO-SAN JOAQUIN RIVER DELTA — NORTH DELTA



FACILITY	2019 USABILITY %	PUMP TYPE
Boathouse Marina	88	Peristaltic
Cliff's Marina	89	Peristaltic
Dagmar's Landing	83	Peristaltic
Delta Bay Marina	*84	Peristaltic
Delta Marina Yacht Harbor	89	Peristaltic
Korth's Pirate's Lair Marina	87	Diaphragm
Oxbow Marina	90	Peristaltic
Riverbank Marina	97	Unknown
Sacramento Marina	*73	Peristaltic
Sherwood Harbor Marina	97	Peristaltic
Tower Park Marina	93	Vacuum
Walnut Grove Marina	*89	Vacuum
Willow Berm Marina, Fuel Dock North	86	Peristaltic
Willow Berm Marina, Fuel Dock South	89	Peristaltic

*See Note under Monitoring Details.

SACRAMENTO-SAN JOAQUIN RIVER DELTA — NORTH DELTA

Photo by Natasha Dunn

→ MONITORING DETAILS

FACILITY	STATUS
Boathouse Marina	Operational
Cliff's Marina	Operational
Dagmar's Landing	Operational
Delta Bay Marina	Non-accessible March
**Note*	*In March, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Delta Marina Yacht Harbor	Operational
Korth's Pirate's Lair Marina	Operational
Oxbow Marina	Operational
Riverbank Marina	Operational
Sacramento Marina	Non-accessible May
**Note*	*In May, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Sherwood Harbor Marina	Operational

Tower Park Marina	Operational
Walnut Grove Marina	Non-accessible May
**Note*	*In May, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Willow Berm Marina, Fuel Dock North	Operational
Willow Berm Marina, Fuel Dock South	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

SACRAMENTO-SAN JOAQUIN RIVER DELTA – SOUTH DELTA

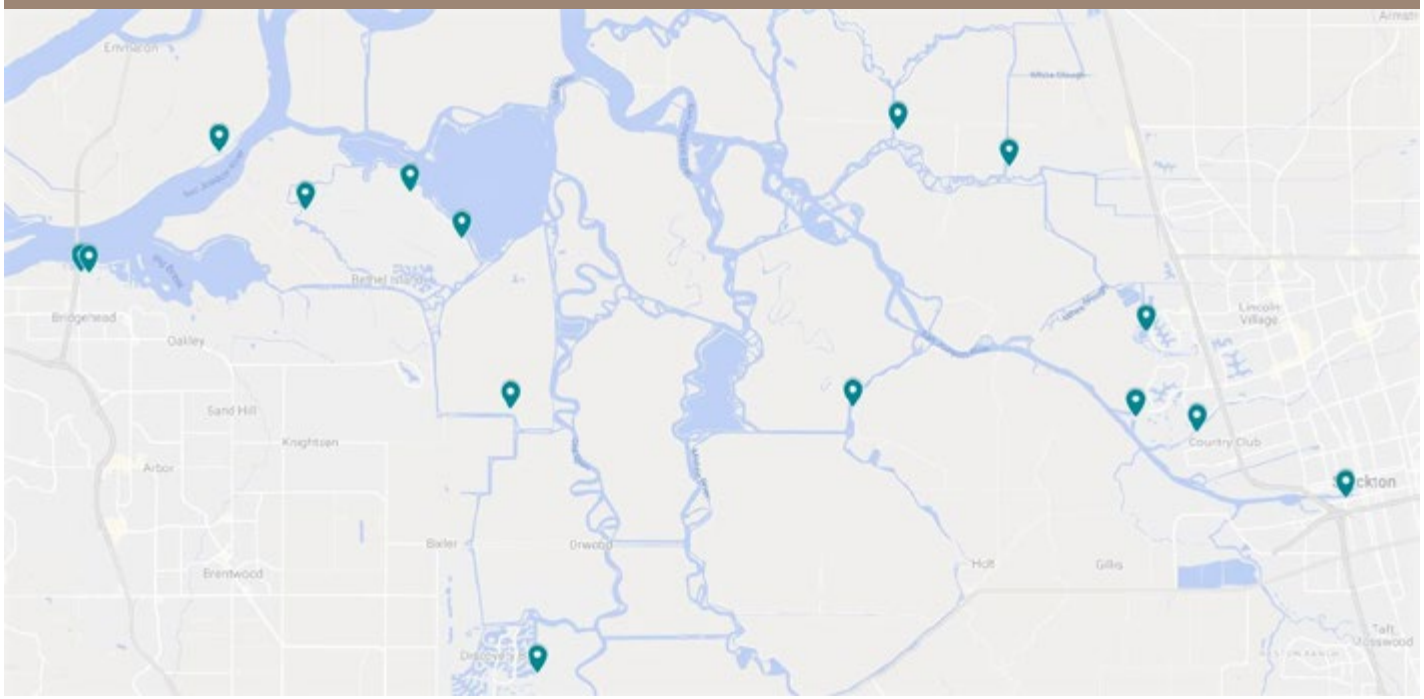
Photo by Natasha Dunn

THE SACRAMENTO-SAN JOAQUIN RIVER DELTA SOUTH REGION HOUSES FIFTEEN MARINAS

SACRAMENTO-SAN JOAQUIN RIVER DELTA — SOUTH DELTA

Bethel Harbor
Discovery Bay Yacht Harbor
Driftwood Marina
Eddo's Harbor
Holland Riverside Marina
King Island Resort
Lauritzen Yacht Harbor
New Life Marina
Paradise Point Marina
River Point Landing
Stockton Downtown Marina
Stockton Yacht Club
Sugar Barge Resort
Tiki Lagoon Resort
Village West Marina

SACRAMENTO-SAN JOAQUIN RIVER DELTA — SOUTH DELTA



FACILITY	2019 USABILITY %	PUMP TYPE
Bethel Harbor, Service Dock (east)	*94	Peristaltic
Bethel Harbor, Service Dock (west)	*96	Peristaltic
Discovery Bay Yacht Harbor	89	Diaphragm
Driftwood Marina	75	Peristaltic
Eddo's Harbor	37	Peristaltic
Holland Riverside Marina	0	Vacuum
King Island Resort	47	Peristaltic
Lauritzen Yacht Harbor, Fuel Dock (east)	96	Peristaltic
Lauritzen Yacht Harbor, Fuel Dock (west)	96	Peristaltic
New Life Marina	61	Unknown
Paradise Point Marina, Far Left Unit	*59	Custom Build
Paradise Point Marina, Middle Left Unit	*11	Custom Build
Paradise Point Marina, Middle Right Unit	*35	Custom Build
Paradise Point Marina, Far Right Unit	*28	Custom Build
River Point Landing Resort	*86	Peristaltic
Stockton Downtown Marina	63	Peristaltic
Stockton Yacht Club	77	Peristaltic
Sugar Barge Resort	75	Peristaltic
Tiki Lagoon Resort	*72	Peristaltic
Village West Marina	92	Peristaltic

*See Note under Monitoring Details.

SACRAMENTO-SAN JOAQUIN RIVER DELTA — SOUTH DELTA

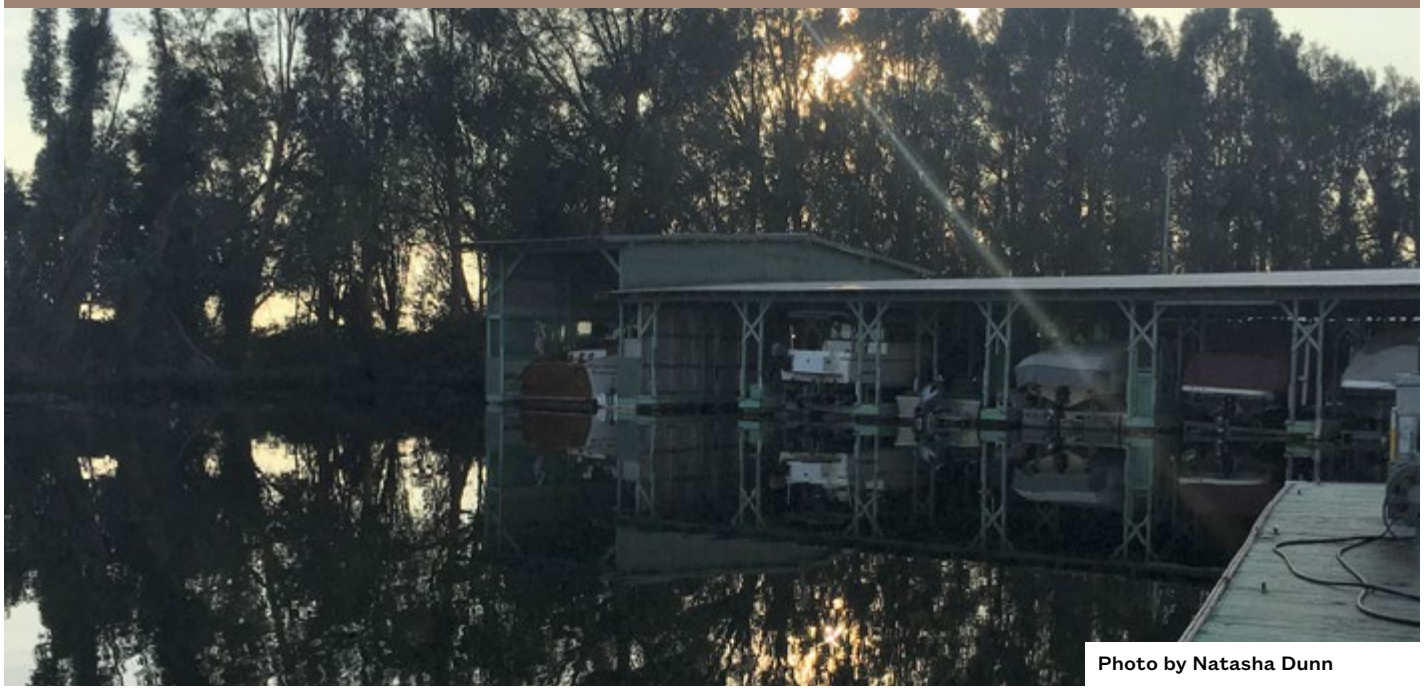


Photo by Natasha Dunn

⟶ MONITORING DETAILS

FACILITY	DESCRIPTION
Bethel Harbor, Service Dock (east)	Non-accessible September
Bethel Harbor, Service Dock (west)	Non-accessible September
**Notes*	*In September, both units were not accessible. Therefore the usability % is based on three monitoring efforts.*
Discovery Bay Yacht Harbor	Operational
Driftwood Marina	Operational
Eddo's Harbor	Non-operational May, September
Holland Riverside Marina	Non-operational all months
King Island Resort	Non-operational September, December
Lauritzen Yacht Harbor – Fuel Dock (east)	Operational
Lauritzen Yacht Harbor – Fuel Dock (west)	Operational
New Life Marina	Non-operational September

SACRAMENTO-SAN JOAQUIN RIVER DELTA — SOUTH DELTA

Paradise Point Marina, Far Left Unit	Non-accessible September, December
Paradise Point Marina, Middle Left Unit	Non-accessbile September, December, Non-operational February, June
Paradise Point Marina, Middle Right Unit	Non-accessible September, December, Non-operational February
Paradise Point Marina, Far Right Unit	Non-accessible September, December
**Note*	*In September and December, these four units were not accessible. Therefore the usability % is based on two monitoring efforts.*
River Point Landing Resort	Non-accessible June
**Note*	*In June, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Stockton Downtown Marina	Non-operational February, December
Stockton Yacht Club	Operational
Sugar Barge Resort	Non-operational June, September
Tiki Lagoon Resort	Non-accessible September
**Note*	*In September, unit was not accessible. Therefore the usability % is based on three monitoring efforts.*
Village West Marina	Operational

See page 10 for follow-up taken after each monitoring site visit. A status of "Operational" indicates the unit was operational and accessible during the four monitoring efforts. Units that were non-operational or non-accessible are indicated, along with the month(s) of each status.

MONTEREY BAY – MONTEREY PENINSULA AND SANTA CRUZ

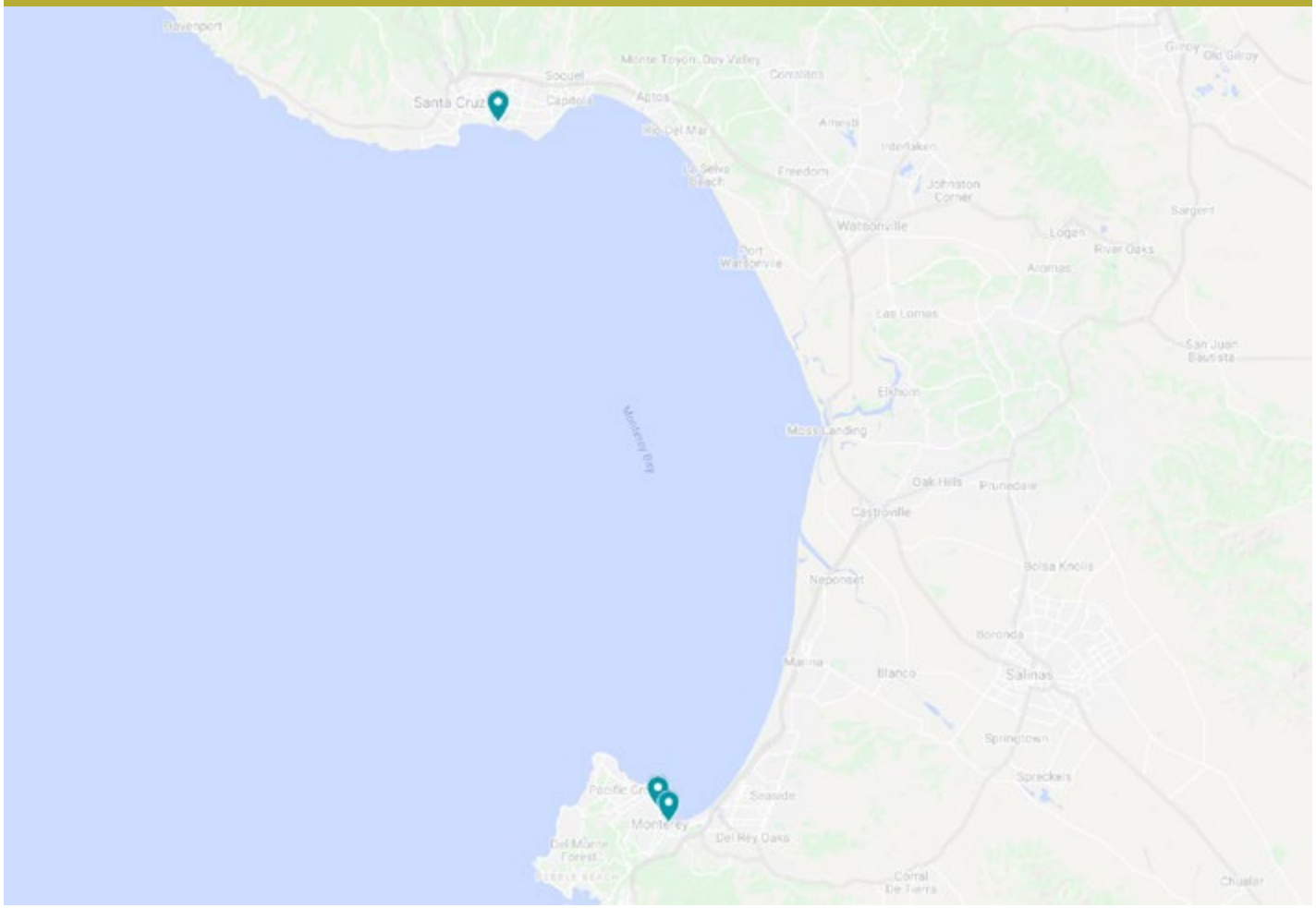
Photo by Jordan Daniels

THE MONTEREY BAY REGION HOUSES THREE MARINAS

Monterey Bay — **MONTEREY PENINSULA AND SANTA CRUZ HARBOR**

Monterey Bay Boatworks
Monterey Harbor
Santa Cruz Harbor

MONTEREY BAY — MONTEREY PENINSULA AND SANTA CRUZ



FACILITY	2019 USABILITY %	PUMP TYPE
Monterey Bay Boatworks	*94	Peristaltic
Monterey Harbor	*94	Peristaltic
Santa Cruz Harbor	*92	Peristaltic

*See Note under Monitoring Details.

MONTEREY BAY — MONTEREY PENINSULA AND SANTA CRUZ

Photo by Jordan Daniels

⟶ MONITORING DETAILS

FACILITY	DESCRIPTION
Monterey Bay Boatworks	Operational
Monterey Harbor	Operational
Santa Cruz Harbor	Operational
**Note*	*Monterey Bay and Santa Cruz monitoring efforts began in May. Therefore each usability % is based on three monitoring efforts.*

CALIFORNIA STATE PARKS DIVISION OF BOATING AND WATERWAYS
www.dbw.ca.gov

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www.sfestuary.org/boating

THE BAY FOUNDATION
www.santamonicabay.org

THE BAY FOUNDATION CLEAN BOATING MATERIALS
www.santamonicabay.org/learn/publications

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www.honeypotday.org

MOBILE PUMPOUT COMPANIES
www.dbw.parks.ca.gov/pages/28702/files/MobileServices_Feb2017.pdf