CALIFORNIA CLEAN VESSEL ACT PUMPOUT AND DUMP STATION PERFORMANCE REPORT 2022

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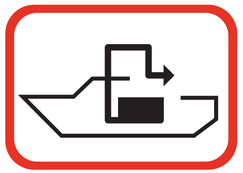
Front cover Image: Morning Light in Alamitos Bay
Photo by Kevin Rowland

Design by Yuju Yeo, All My Sisters

PURPOSE

This California Clean Vessel Act Pumpout and Dump Station Performance Report highlights findings on the condition and operational status of pumpout and dump stations during 2022. Discharging sewage overboard creates environmental and human health problems, especially in California, 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 such as pumpout stations, dump stations, floating restrooms, and mobile pumpout services.



Pumpout unit logo

Dump station unit logo

KEY PARTNERS

NORTHERN CALIFORNIA

San Francisco Estuary Partnership (SFEP), a National Estuary Program, has monitored pumpout stations and dump stations throughout the San Francisco Bay, Sacramento-San Joaquin River Delta, and Monterey Bay regions since 2008.
www.sfestuary.org/boating / (415) 778-6687

SOUTHERN CALIFORNIA

The Bay Foundation (TBF), a 501(c)3 non-profit organization has monitored pumpout stations and dump stations from Santa Barbara to San Diego County since 2008. Morro Bay National Estuary Program (MBNEP) has monitored pumpout units in San Luis Obispo County since 2019.
www.santamonicabay.org / (888) 301-2527

The Santa Monica Bay National Estuary Program (SMBNEP) is one of the United States Environmental Protection Agency's 28 National Estuary Programs, dedicated to protecting and restoring water quality and the ecological integrity of estuaries of national significance. This report furthers the objectives and goals of the SMBNEP's Comprehensive Conservation and Management Plan. www.smbnep.org.

FUNDING

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. It is funded by the Sport Fish Restoration and Boating Trust Fund, and administered by the U.S. Fish and Wildlife Service. For more information, visit dbw.parks.ca.gov, call (888) 326-2822, or contact: California State Parks Division of Boating and Waterways P.O. Box 942896, Sacramento, CA 94296.

KEY OBJECTIVES

DBW annually awards two geographically bound Clean Vessel Act Education and Outreach Grants, focused on educating recreational boaters on boat sewage and its proper disposal.

The objectives of the education and outreach program are to inform recreational boating communities about sewage-related issues and impacts, available resources, proper vessel sewage disposal practices that encourage the use of pumpout stations, dump stations, and mobile pumpout services, and educate boating facility operators about the availability of DBW grants to install and maintain publicly-accessible pumpout and dump stations on site. An additional objective of the CVA Education and Outreach Grant Program is to assist DBW in determining the operational status, repair needs, and usage of pumpout and dump stations via triannual monitoring.

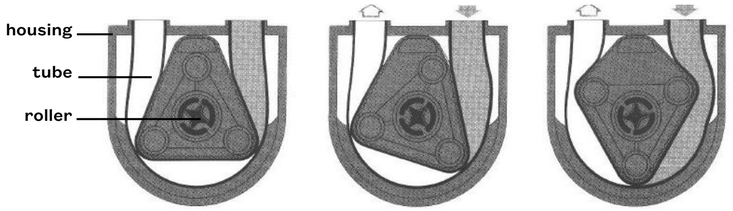
Awardees SFEP and TBF accomplish these goals and objectives through direct outreach, collaboration, and technical support.

PUMP TYPES

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

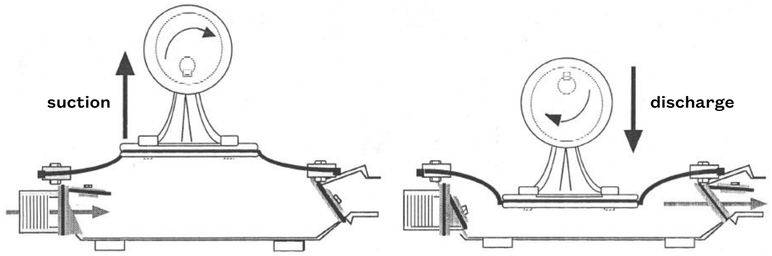
PERISTALTIC

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.



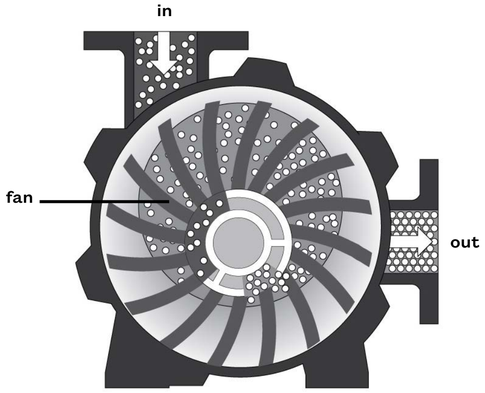
DIAPHRAGM

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 of, and decreasing pressure behind the fan, creating suction that allows contents to move through the lines.

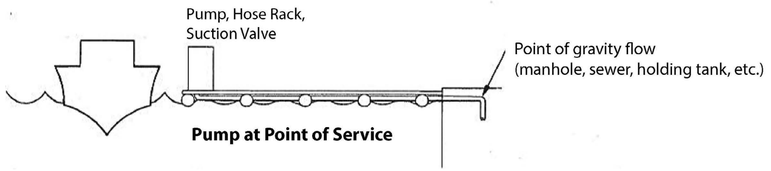


Peristaltic pump
Photo by TBF

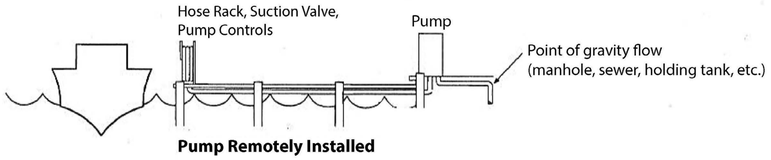
PUMPOUT SYSTEM TYPES

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:



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



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 the layout with multiple hose stations connected to a single pump. This allows two or more users of a pump and may be set up to allow for remote operation. Careful design of this configuration is needed for optimal performance.

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 Westpoint Harbor
Photo by SFEP

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.

In-slip pumpout tank at Oyster Cove Marina
Photo by SFEP

Option 2: The marina installs multiple pumpout hydrants throughout the marina, 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 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 boat's holding tank contents.

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 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 before 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.

Mobile pumpout service in Marina del Rey Harbor
Photo by TBF

There are benefits and drawbacks to each of these setups, but the benefits of mobile pumpouts are very clear. Boaters value the convenience of mobile pumpouts as a means of sewage disposal, and are highly satisfied with mobile pumpout services. 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.

DUMP STATION SYSTEM TYPES

GRAVITY-DRAINED DUMP STATION

Gravity-drained dump station in Santa Barbara Harbor
Photo by TBF

Some portable toilet dump stations are installed as stand-alone systems without a connection to a motor. These units are gravity-drained, also known as “gravity-fed”, and function through the force of gravity which pushes and drains sewage into an underground holding tank, which is often without sewer utility connections.

MOTORIZED DUMP STATION

Dump stations can also be connected to a motor. A connection to a motor allows for the disposal unit to move sewage to its final sewer or septic destination, away from the immediate vicinity. Depending on the unit and the way it is installed, motorized dump stations can connect to either onshore sewer lines, septic systems, or to storage tanks for the disposal of waste.

Dump station (right) installed at the point of service
Photo by TBF

Dump station installed remotely from point of service
Photo by TBF

Most motorized dump stations are directly connected to pumpout stations’ sewer lines, infrastructure, and motor, providing the mechanics to pump waste for its disposal. Motors directly connected to dump stations can be operated either through an ‘On’ and ‘Off’ button installed on the dump station unit or through the neighboring and connected pumpout stations’ ‘On’ and ‘Off’ buttons. Similar to pumpout units, dump stations powered by these shared motors can be installed either at the point of service or remotely, depending on the make and model.

Motorized dump station
Photo by TBF

There are several models of motorized dump stations that include electric parts in various degrees (such as 'On' and 'Off' switches, ejector pumps, auto-risers, electric ball valves, and sensory systems, etc.), and they can be connected to and powered by the pumpout station’s motor in a range of ways.

VARIATIONS OF MOTORIZED DUMP STATION CONNECTION TO PUMPOUT INFRASTRUCTURE

A gravity-drained dump station manually connected to a pumpout unit’s infrastructure by attaching the pumpout unit’s hose to the dump station waste fitting
Photo by SFEP

Some dump stations are not directly connected to pumpout sewer lines or a motor but are still used in tandem with pumpout systems. To ensure contents are properly disposed of, these dump stations must be manually connected to a pumpout station’s infrastructure. The dump station's contents are pumped out using a pumpout station’s parts and power. To accomplish this pumpout unit’s suction hose is connected to the dump station’s waste piping ball check valve to provide vacuum power and to pump out waste.

In some cases, a motorized dump station’s connection to a sewer line must be manually opened by utilizing a ball valve. This allows for pressure to enter the unit from the shared motor and for it to function remotely or at point of service.

Motorized dump station requiring the manual opening of its ball valve for drainage
Photo by TBF

PUMPOUT WAND ATTACHMENT

Although not technically a dump station, a pumpout wand functions to provide the same service that a dump station provides to boaters. Rather than installing a dump station, some marinas opt to retrofit their pre-existing pumpout units with a suction wand attachment. To do this, the pumpout unit’s nozzle is removed from the hose’s coupler and a suction wand is inserted in its place.

Pumpout wand attachment and supporting parts
Photo by KECO Pump & Equipment

Pumpout unit retrofitted with a port-a-potty wand attachment
Photo by TBF

MAINTENANCE RECOMMENDATIONS

PUMPOUT STATIONS

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 missing equipment.

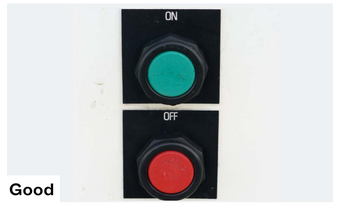

Good


Good


Good


Good

Good



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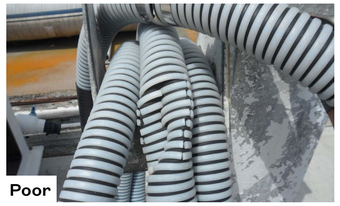
Poor


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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. The number of repairs on one hose should be limited as performance will degrade over time.

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.

ON/OFF BUTTON

Make sure that on and off buttons are easy to find and labeled accordingly.

SIGNAGE

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

UNUSUAL NOISES

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

Photos by TBF and SFEP

MAINTENANCE RECOMMENDATIONS

DUMP STATIONS

Dump station maintenance is also key for ensuring consistent operation. These units are often connected to the same motor as a pumpout machine, so any issue seen with a dump station can be indicative of a larger problem. Marina operators should regularly inspect the hose connections and internal housing for wear and tear on the machine.

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Good


Good


Good


Good

Good

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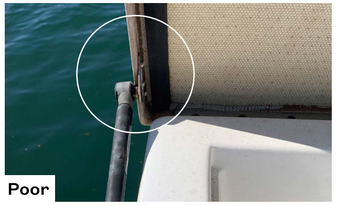
Poor


Poor


Poor

Poor


Poor

HOUSING

The housing of the machinery should be intact, structurally sound, and clean. Make sure the encasing around the machine is not dented, punctured, or broken in a way that would damage the mechanisms inside. Also, ensure that there is no debris or garbage inside of the dump station.

LID

Make sure that the lid closes completely, can be secured, and is not broken or damaged. A lid that does not close could allow sewage to be expelled out while the machine is running.

HINGES

Ensure that the hinges connecting the lid to the housing are not rusty, broken, or missing.

BALL VALVE

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

RINSE HOSE

Check that the rinse hose is available and can be used to clear out lingering sewage from the inside of the dump station after boaters are finished using it.

ON/OFF BUTTON

Make sure that on and off buttons are easy to find and labeled accordingly.

SIGNAGE

Ensure there is adequate signage and it is legible. Signage should include the dump station symbol, funding credit, instructions, hours of operation, cost, and contact number for problems.

UNUSUAL NOISES

Turn the machine on and listen for unusual noises including squeaking, rattling, and grinding. Also, listen for air leaks especially around threaded connections.

Photos by
TBF and SFEP

WHY MONITOR?

The goals of sewage pumpout station and dump station monitoring are to decrease sewage discharged into waterways by ensuring California's pumpout and dump station network is operational, well-maintained, accessible, and available to recreational boaters.

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

- ensure stationary pumpout and dump station equipment is operational at all times and provide sewage pollution prevention services to California recreational boaters;
- track the general condition and evaluate performance of pumpout stations;
- track the general condition of dump stations;
- update the Pumpout Nav app accordingly so units status is accurate;
- assist facilities that do not meet Division of Boating and Waterway's (DBW) grant requirements by offering a reliable source of technical assistance and resources;
- promote the installation and proper maintenance of pumpout and dump stations by informing facilities of DBW grant opportunities;
- maintain contact with recipients of DBW's grant funding for recreational boaters; and
- provide additional sewage management resources to recreational boaters.

MONITORING RANGE & FREQUENCY

SOUTHERN CALIFORNIA

The Bay Foundation and Morro Bay National Estuary Program monitor 71 publicly accessible pumpout stations in 14 Southern California harbors from Morro Bay to San Diego.

NORTHERN CALIFORNIA

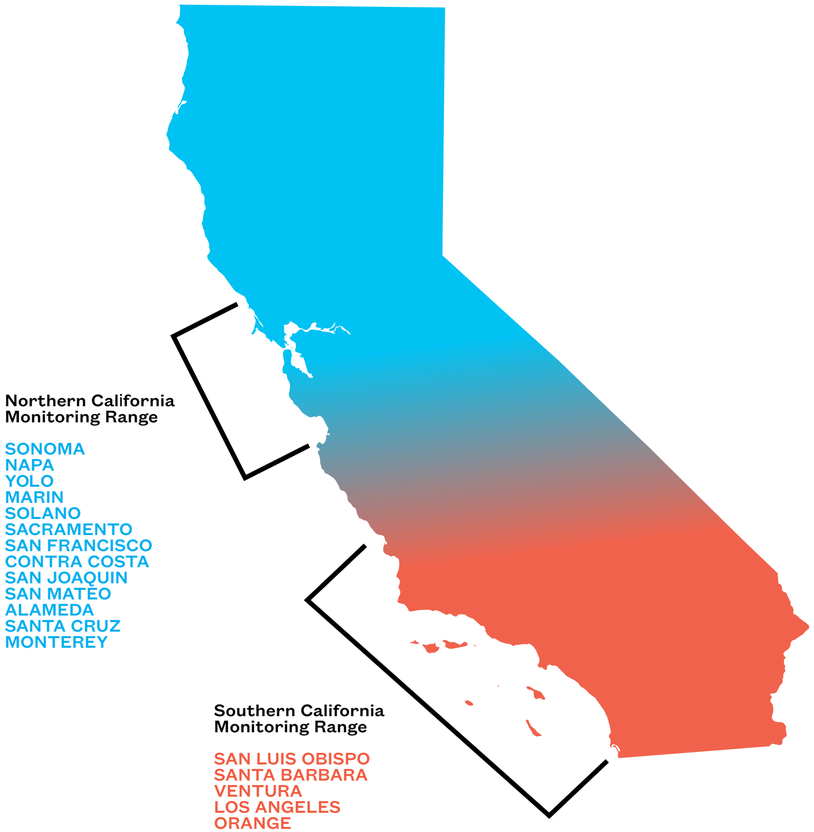
San Francisco Estuary Partnership monitors 80 publicly accessible pumpout stations in 64 Northern California marinas throughout the San Francisco Bay and Delta and Monterey Bay.

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

ENSURING ACCESS

It is important to note that DBW recommends a pumpout unit ratio of no more than 250 boats sized 25 feet or longer per one pumpout. DBW also recommends that there be one pumpout in subregions where there are 50 or more slips sized 25 feet or longer in order to accommodate the sewage disposal needs of vessels without providing resources in areas where they will be underutilized.

In addition, DBW recommends a dump station unit ratio of no more than 500 boats less than 25 feet in length per one dump station. They also recommend having one dump station unit in subregions where there are 50 or more slips less than 25 feet, in order to accommodate the sewage needs of smaller vessels without providing resources in areas where they will be underutilized (California Vessel Waste Disposal Plan, 2020).



MONITORING PARAMETERS

The free Pumpout Nav app is used by the monitoring teams as a surveying tool to standardize data collection, improve efficiency, and reduce error. All monitoring results get emailed directly to participating facility managers through the Pumpout Nav app. Additional follow-up with facility managers is initiated via email or phone if staff noticed issues of concern during monitoring visits. The monitoring effort and follow-up allow staff to work collaboratively with facility managers to resolve any problems that may arise.

PUMPOUT STATIONS

Signage in Balboa Yacht Basin
Photo by Carrie Baldwin

The monitoring teams, Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation, note the presence or absence of the following signage:
— Pumpout station symbol
— Funding credit
— Instructions for pumpout station operation
— Hours of operation
— Cost
— Contact number for problems
— On/off buttons

Hour counter
Photo by TBF

Specific pumpout parts rated by Morro Bay National Estuary Program, San Francisco Estuary Partnership, and The Bay Foundation include:
— Hose
— Nozzle
— Sight glass
— Pedestal
— On/off buttons
— Motor unit
— Ball valve
— Nozzle's backflow flap

The condition of parts are rated as follows:
0 = absent, 1 = needs repair, 2 = worn, 3 = excellent

Each motor unit should be 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 number of hours that the motor runs. 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
Photo by MBNEP

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 time
Photo by TBF

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.

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.

Dye tablet dissolving in 5 gallon bucket of water
Photo by TBF

Other parameters recorded during site visits include: make and model of pumpout, pump type, approximate distance from pump to hose stand, and any notable 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 that Morro Bay National Estuary Program, San Francisco Estuary Partnership, The Bay Foundation, and California State Parks Division of Boating and Waterways keep in close contact with facility managers that operate both dump stations and pumpout stations. These organizations are available for questions, clarification on monitoring, and a reliable source for technical assistance.

DUMP STATIONS

Dump stations are monitored for many of the same parameters as pumpout stations, however due to the simplicity of these units, usability scores are not calculated.

The monitoring teams note the presence or absence of the following signage:
— Dump station symbol
— Funding credit
— Instructions for dump station operation
— Hours of operation
— Cost
— Contact number for problems
— On/off buttons

Specific dump station parts inspected (not rated) by the monitoring teams include:
— Housing
— Lid
— Hinges
— Ball valve
— Rinse hose
— On/off buttons

Other parameters recorded during site visits include: make and model of dump station, presence and motor type of each unit, the operability status of each unit, and any notable recent developments.

Documenting baseline information about dump stations, such as their motor type and operational status, helps to provide a reliable directory of region-specific dump stations to boaters with portable toilets.

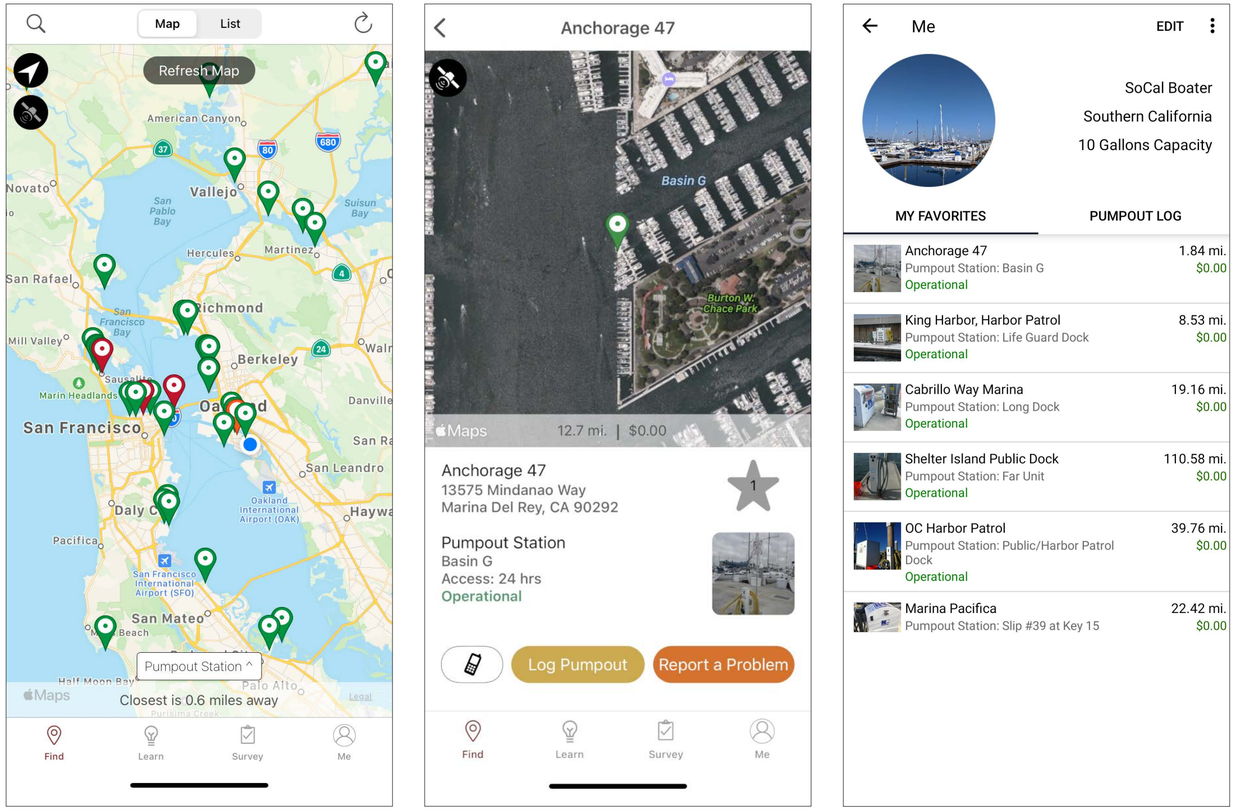
PUMPOUT NAV APP

Pumpout Nav, a free iOS and Android app, is designed for boater use on-the-go and aboard the vessel. It helps boaters find participating 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. Demarcation for federally designated No Discharge Zones (NDZ) are present in the app for two states: California and Washington. Additional personalized features allow boaters to create a list of their favorite sewage disposal units, log their pumpouts, and choose their boating region. Pumpout Nav additionally includes participating units in the states of Oregon, Washington, Florida, Rhode Island, and the Lake Champlain shorelines in New York, Vermont, and Quebec.

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.

Pumpout Nav app logo



Pumpout Nav app user interface displaying closest pumpout units

METHODOLOGY

PUMPOUT STATIONS

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 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 snapshot” in the tables to follow.

MBNEP staff filling 5-gallon bucket in order to test vacuum time
Photo by MBNEP

REGION DETAILS

This report analyzes the data from the three monitoring efforts in 2022.

This report compiles information about pumpout stations from regions of Northern and Southern California and is separated by County, Harbor, Port, Bay, or Delta Region. Each section includes a corresponding map, and a "2022 Pumpout Usability Snapshot and Operational Status" table. Units that were monitored for at least one of the three monitoring events were included in the report. When a unit was no longer monitored during the reporting period, the note "Stopped Monitoring" was added.

The "2022 Pumpout Usability Snapshot and Operational Status" table includes facility information, pump types, triannual usability percentage snapshots (as calculated on pg. 12), and triannual unit-specific operational statuses.

Under the "Spring", "Summer", and "Fall" columns lie “Usability Snapshot (%)” and “Operational Status” subcolumns. In certain instances, under the “Usability Snapshot (%)” subcolumn, the "-" symbol is used to show that "Non-Accessible" units have no usability percentage. Under the "Operational Status" column an "Operational" status indicates that the unit was operational and accessible. A "Non-Operational" status indicates that the unit was not in operation.

“Non-Operational” units are identified with 'Out of Order' signs or warning tape, and are recognized as Non-Operational due to hardware issues such as a broken motor or nonexistent vacuum pressure. A "Non-Accessible" unit status indicates a unit that could not be physically reached or tested by monitoring staff. This inaccessibility was due to marina closures, units being stored away due to health and safety concerns, or building projects (among other reasons).

In addition, each region in the report contains a corresponding dump station-specific page including a “2022 Dump Station Operational Status” table. The “2022 Dump Station Operational Status” table includes facility information, motor type, and triannual unit-specific operational statuses. Units are either labeled as "Non-Accessible" and "Non-Operational" under the season they were monitored in. Similarly to pumpout stations, an "Operational" status indicates that the unit was operational. A "Non-Operational" status indicates that the unit was not in operation.

To prevent the spread of COVID-19, monitoring and marina staff followed guidance from public health officials including the United States Centers for Disease Control and Prevention, the California Department of Public Health, and local county health officials when conducting surveys.

Port of Los Angeles, Angels Gate
Photo by John Hollenbeck

2022 EXECUTIVE REPORT SUMMARY

SOUTHERN CALIFORNIA HIGHLIGHTS

TBF and MBNEP monitored **71** publicly accessible pumpout stations and **7** dump stations in **14 Southern California harbors** during the Spring, Summer, and Fall of 2022.

— **In the Spring season**, **77%** of pumpout stations and **100%** of dump stations were operational and accessible. On average, operational and accessible pumpout stations in the region received a usability score of **83%**, meaning there was a '**Good**' likelihood that a boater would have a successful experience at the pump.
— **In the Summer season**, **76%** of pumpout stations and **88%** of dump stations were operational and accessible. On average, operational and accessible pumpout stations in the region received a usability score of **83%**, meaning there was a '**Good**' likelihood that a boater would have a successful experience at the pump.
— **In the Fall season**, **79%** of pumpout stations and **100%** of dump stations were operational and accessible. On average, operational and accessible pumpout stations in the region received a usability score of **82%**, meaning there was a '**Good**' likelihood that a boater would have a successful experience at the pump.
— **6** new pumpout and/or dump station units were installed in the region using Clean Vessel Act (CVA) Installation Grant funds.

Please refer to report page 12 for further information on how scores were designated.

NORTHERN CALIFORNIA HIGHLIGHTS

SFEP monitored **80** publicly accessible pumpout stations and **8** dump stations in **64 Northern California marinas** during the Spring, Summer, and Fall of 2022.

— **In the Spring season**, **85%** of pumpout stations and **80%** of dump stations were operational and accessible. On average, operational and accessible pumpout stations in the region received a usability score of **84%**, meaning there was a '**Good**' likelihood that a boater would have a successful experience at the pump.
— **In the Summer season**, **89%** of pumpout stations and **86%** of dump stations were operational and accessible. On average, operational and accessible pumpout stations in the region received a usability score of **87%**, meaning there was a '**Good**' likelihood that a boater would have a successful experience at the pump.
— **In the Fall season**, **89%** of pumpout stations and **71%** of dump stations were operational and accessible. On average, operational and accessible pumpout stations in the region received a usability score of **85%**, meaning there was a **'Good'** likelihood that a boater would have a successful experience at the pump.
— **1** new pumpout unit and/or dump station was funded for maintenance in the region using CVA Operations & Maintenance Grant funds.

CVA GRANTS PROGRAM

DBW strives to deploy an adequate, accessible, and well-maintained network of vessel waste disposal facilities (pumpouts, dump stations, and floating restrooms) through its CVA grant programs, and to proactively educate the California boating community about sewage-related issues, impacts, resources, and proper management.

In 1992, Congress passed the CVA to help reduce water pollution from vessel sewage discharges into U.S. waters. The grant program established by the CVA funds the construction, renovation, operation, and maintenance of pumpout and dump stations for use by recreational boaters. Funding comes from the federal Sport Fish Restoration and Boating Trust Fund. DBW serves as the Grant Coordinator for the state, and accepts grant applications on an on-going basis.

Are you eligible? CVA grant funds are available to both public and private marina facility operators. This includes all local governmental entities and private businesses that own and operate boating facilities open to the general public.

There are two types of grants:
— Pumpout and Dump Station Installation Grant - can reimburse recipients for up to 75% of the installation cost of pumpout and/or dump stations.
— Pumpout and Dump Station Operations and Maintenance (O&M) Grant - can reimburse recipients for up to 75% of the eligible costs of pumpout parts and labor to maintain an existing pumpout.

INTERESTED IN APPLYING?

Learn more and find applications and additional information by scanning the code or visiting http://www.dbw.ca.gov/cvagrants

Should you need further assistance, please contact grant specialist **Ethan Tratner at (916) 902-8823** or **ethan.tratner@parks.ca.gov**.

Save the waters you love

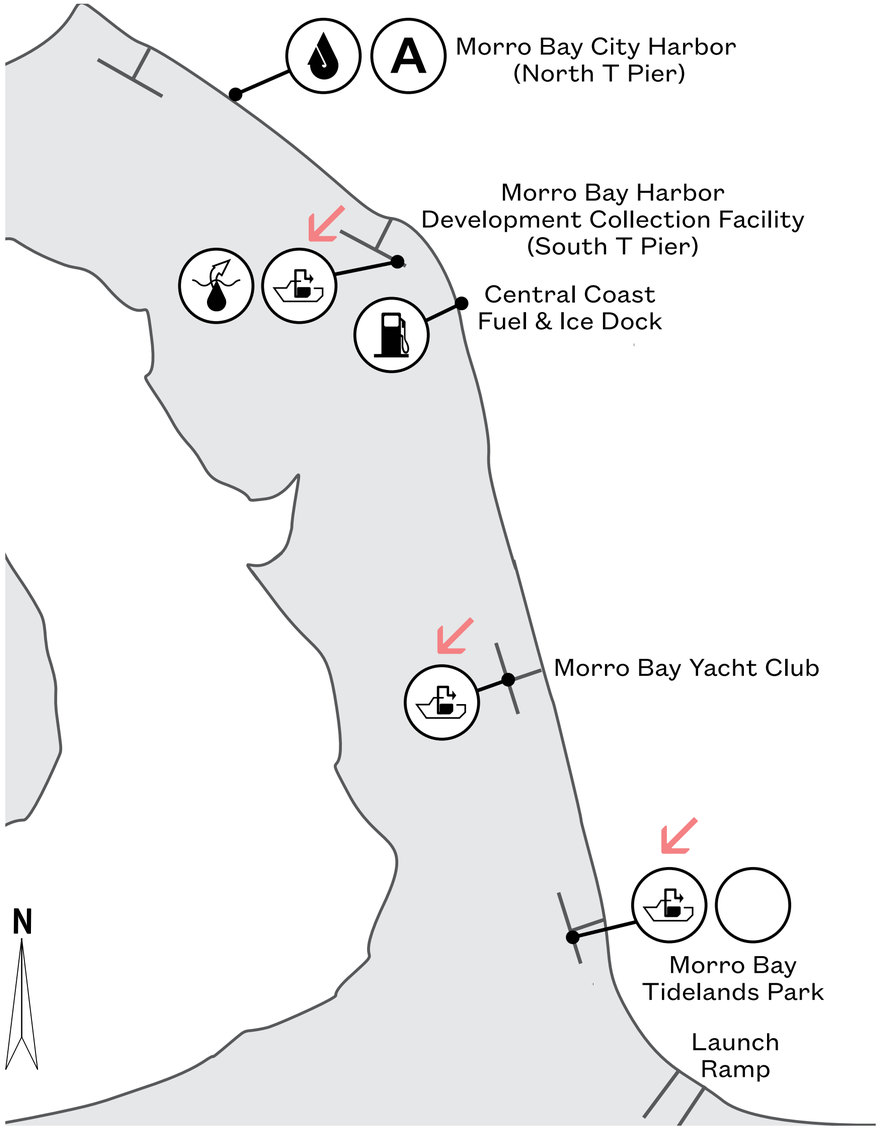
SOUTHERN CALIFORNIA

SAN LUIS OBISPO COUNTY

Morro Bay Harbor

A lovely sunset by the water's edge featuring Morro Bay moorings
Photo by TBF

SAN LUIS OBISPO — MORRO BAY HARBOR



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Morro Bay Yacht Club	Peristaltic	22	Non-Operational	6	Non-Operational	6	Non-Operational
South T Pier	Diaphragm	31	Non-Operational	17	Operational	54	Operational
Tidelands Park	Peristaltic	60	Operational	78	Operational	63	Operational

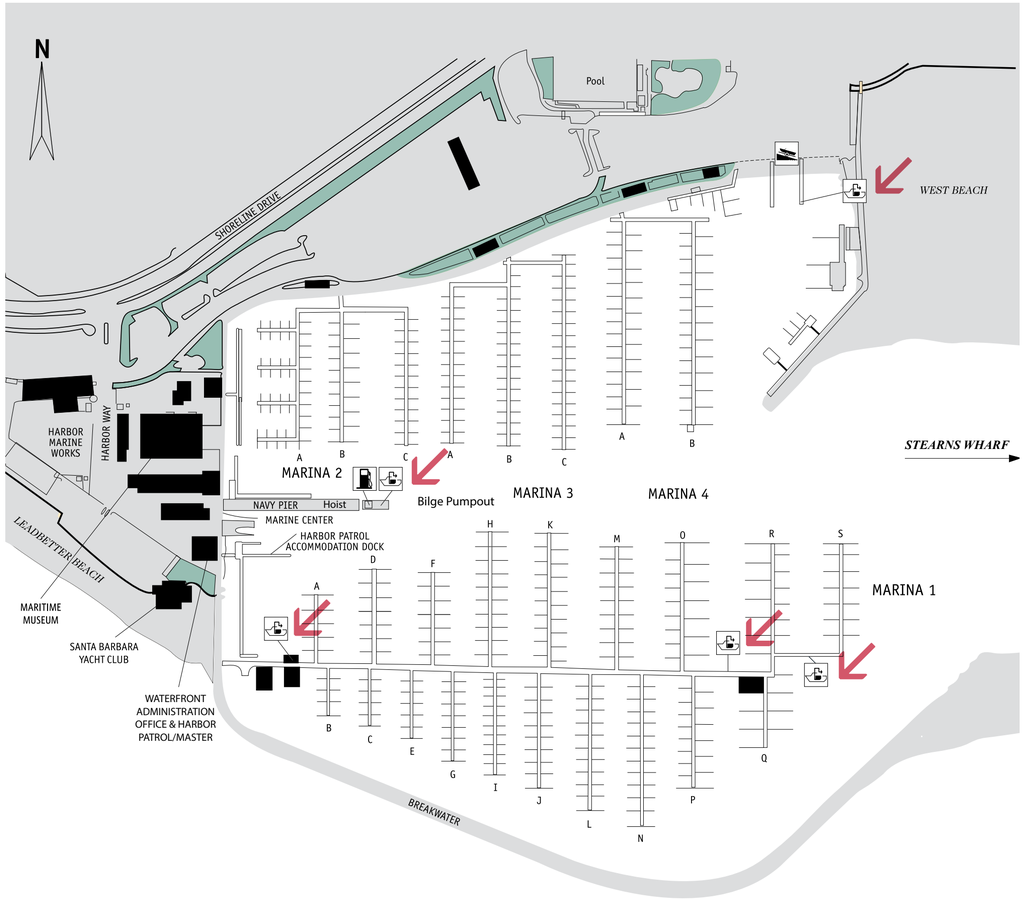
Morro Bay beauty
Photo by TBF

SANTA BARBARA COUNTY

Santa Barbara Harbor

Foggy Mountain Views in Santa Barbara Harbor
Photo by TBF

SANTA BARBARA — SANTA BARBARA HARBOR



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Boat Launch	Peristaltic	97	Operational	97	Operational	97	Operational
Fuel Dock	Peristaltic	90	Operational	94	Operational	90	Operational
Marina One, Far unit, RS finger	Peristaltic	71	Operational	78	Operational	78	Operational
Marina One, Mid unit, PQ finger	Peristaltic	89	Operational	89	Operational	96	Operational
Marina One, Near unit, west of A finger	Peristaltic	91	Operational	97	Operational	94	Operational

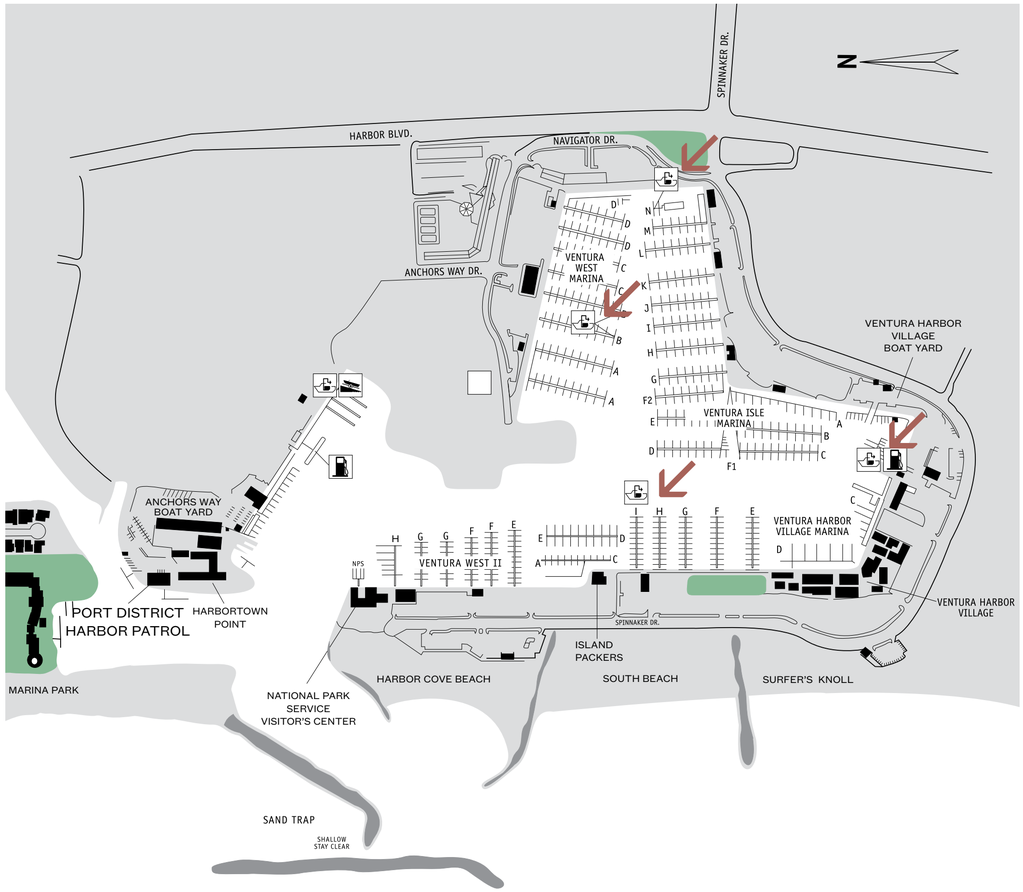
Santa Barbara Harbor
Photo by Earl Wilcox

VENTURA COUNTY

Ventura Harbor
Channel Islands Harbor

Ventura County, Channel Islands Harbor Beach
Photo by TBF

VENTURA — VENTURA HARBOR

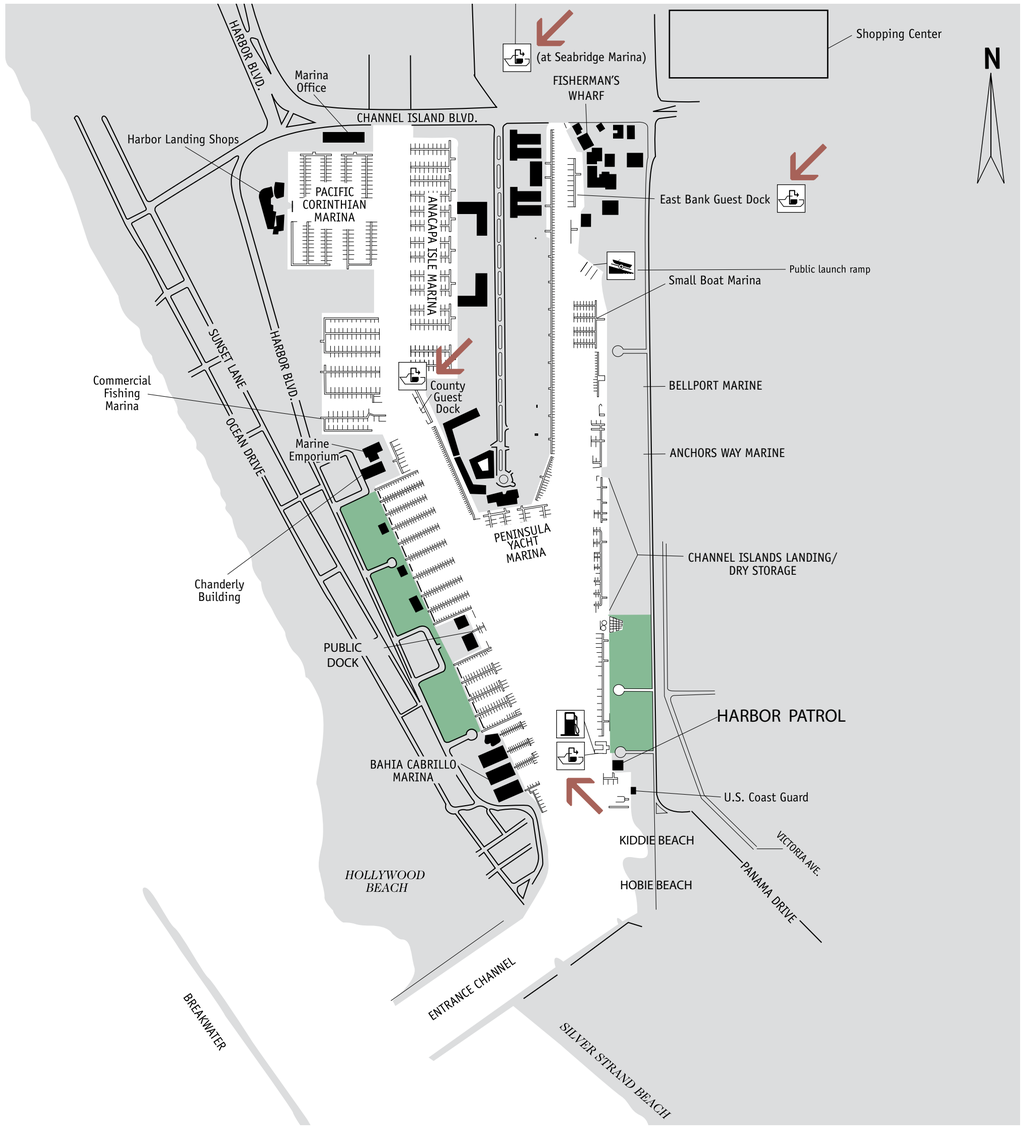


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Ventura Harbor Island Packers	Peristaltic	82	Operational	90	Operational	97	Operational
Ventura Harbor Marine Fuel, far	Diaphragm	28	Non-Operational	28	Non-Operational	90	Operational
Ventura Harbor Marine Fuel, near	Diaphragm	28	Non-Operational	28	Non-Operational	78	Operational
Ventura Isle Marina, N Dock	Diaphragm	85	Operational	90	Operational	96	Operational
Ventura West Marina, B dock left/east	Diaphragm	84	Operational	79	Operational	94	Operational
Ventura West Marina, B dock right/west	Diaphragm	81	Operational	85	Operational	87	Operational

Ventura Harbor Village
Photo by TBF

VENTURA — CHANNEL ISLANDS HARBOR



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
East Bank Guest Dock, far	Peristaltic	97	Operational	75	Operational	72	Operational
East Bank Guest Dock, near	Peristaltic	97	Operational	75	Operational	56	Operational
Peninsula Park, County Guest Dock	Peristaltic	97	Operational	94	Operational	74	Operational
Harbor Patrol Dock	Peristaltic	89	Operational	81	Operational	81	Operational
Seabridge Marina, F dock	Peristaltic	97	Operational	97	Operational	33	Non-Operational

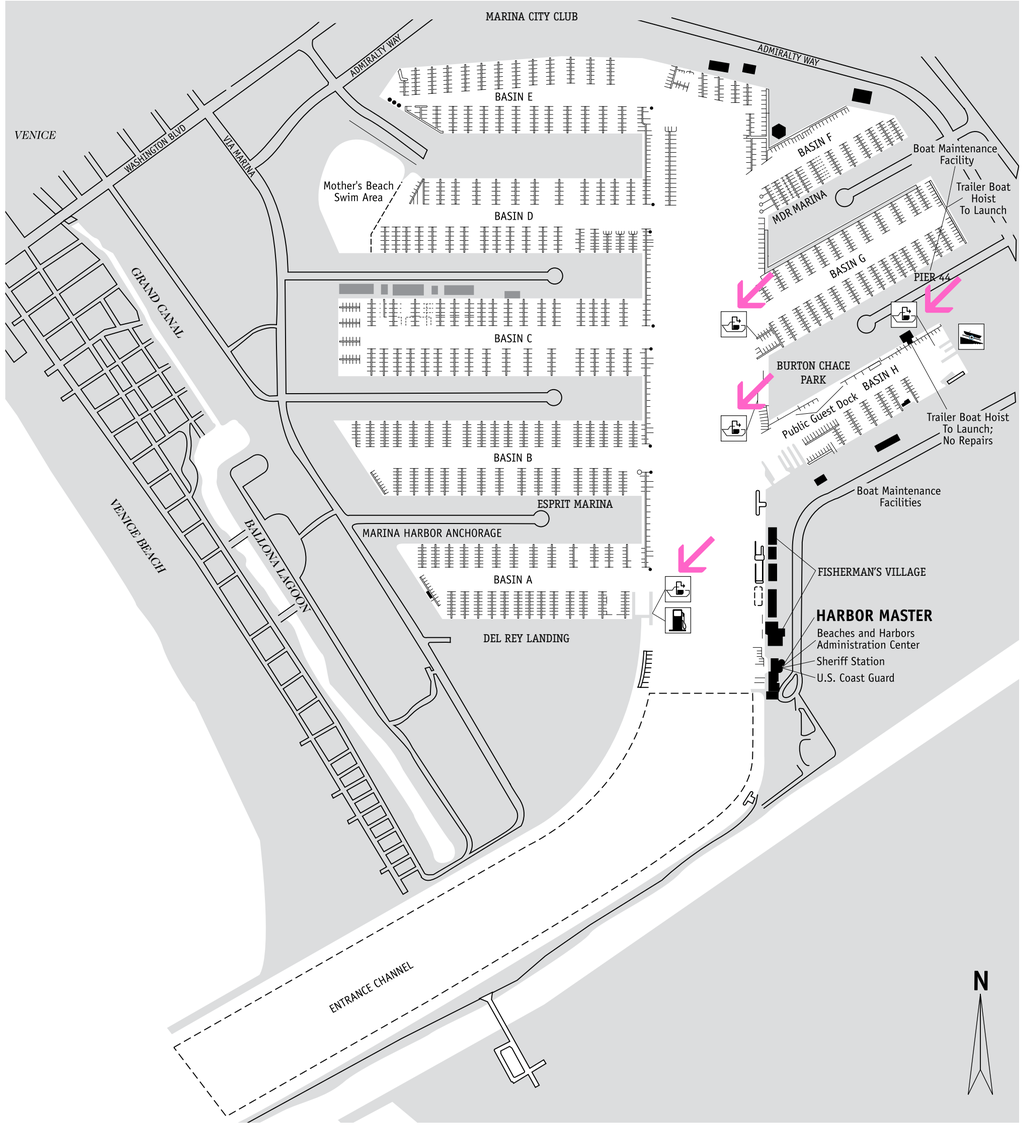
Boats docked in Channel Islands harbor
Photo by Zachary Theodore on Unsplash

LOS ANGELES COUNTY

Marina del Rey Harbor
King Harbor
Port of Los Angeles
Port of Long Beach / Shoreline
Port of Long Beach / Los Alamitos

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

LA — MARINA DEL REY HARBOR



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Anchorage 47	Peristaltic	39	Non-Operational	33	Non-Operational	33	Non-Operational
Burton Chace Park	Peristaltic	33	Non-Operational	33	Non-Operational	33	Non-Operational
Del Rey Landing, far	Peristaltic	84	Operational	91	Operational	85	Operational
Del Rey Landing, near	Peristaltic	73	Operational	51	Operational	78	Operational
Launch Ramp	Peristaltic	0	Non-Operational	81	Operational	61	Operational

Photo by Roger Lipera on Unsplash

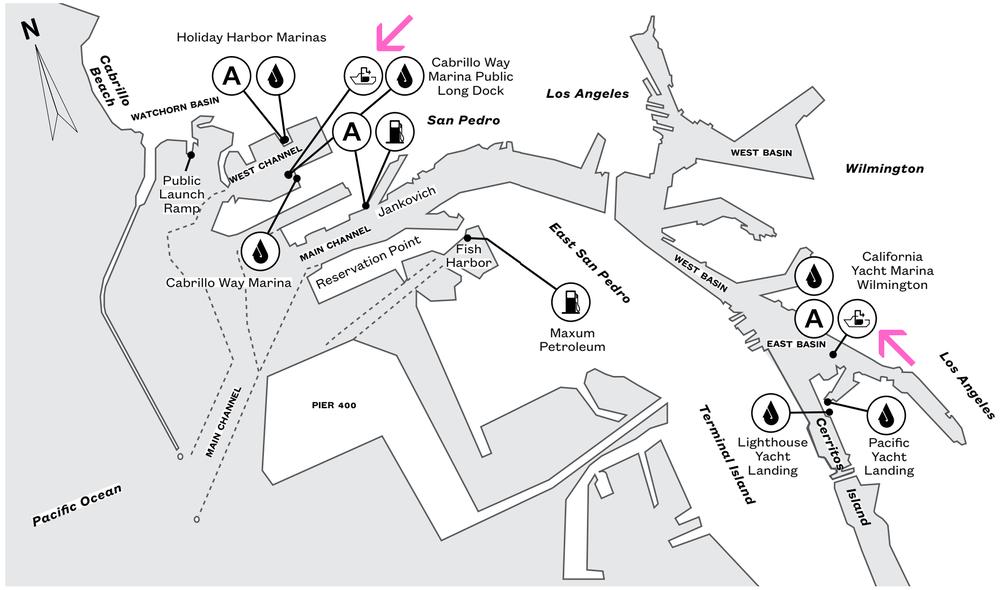
LA — KING HARBOR

2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Harbor Patrol	Peristaltic	78	Operational	67	Operational	90	Operational

Photo by Kris Delano

LA — PORT OF LOS ANGELES

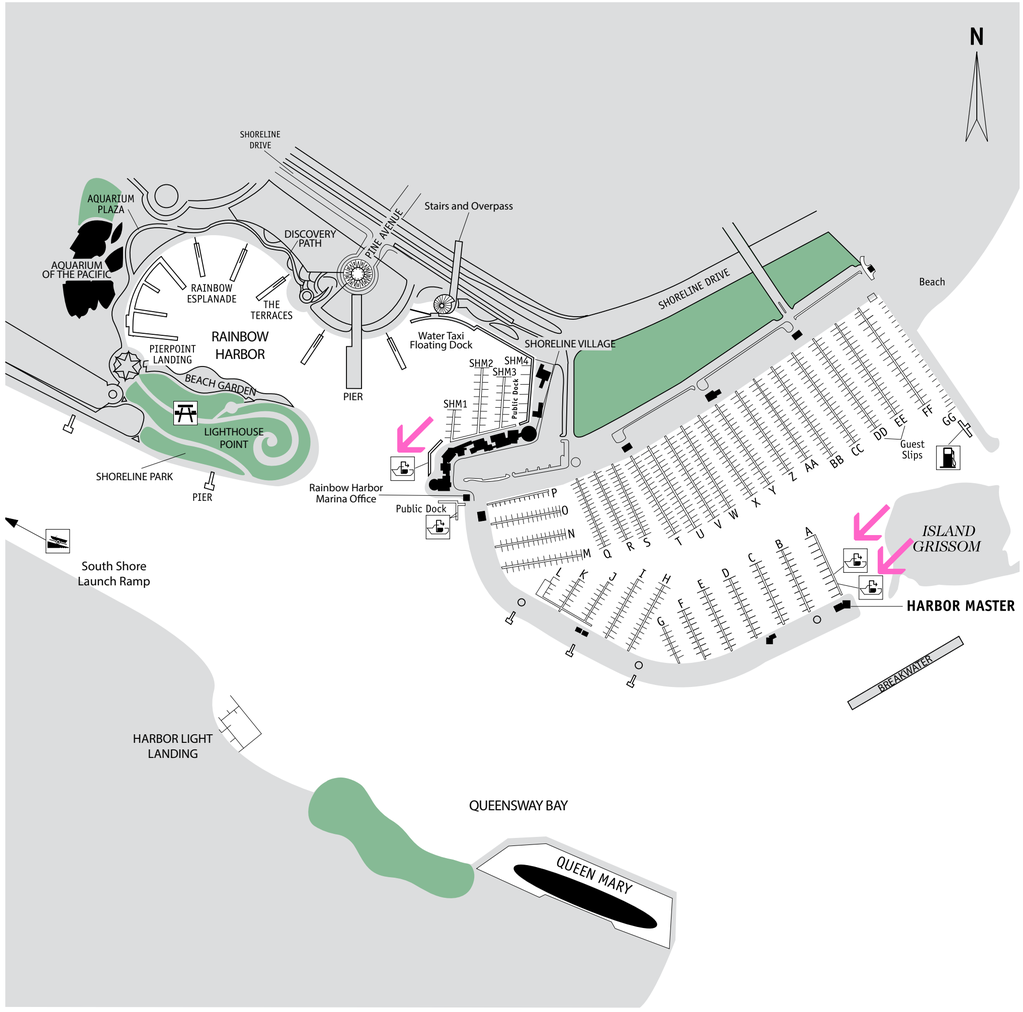


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Cabrillo Way Marina	Diaphragm	96	Operational	92	Operational	33	Non-Operational
California Yacht Marina, Wilmington, F Dock	Peristaltic	56	Operational	89	Operational	59	Operational

Point Vicente Lighthouse and scenic coastline cliffs
Photo by Thomas Poster

LA — PORT OF LONG BEACH / Shoreline

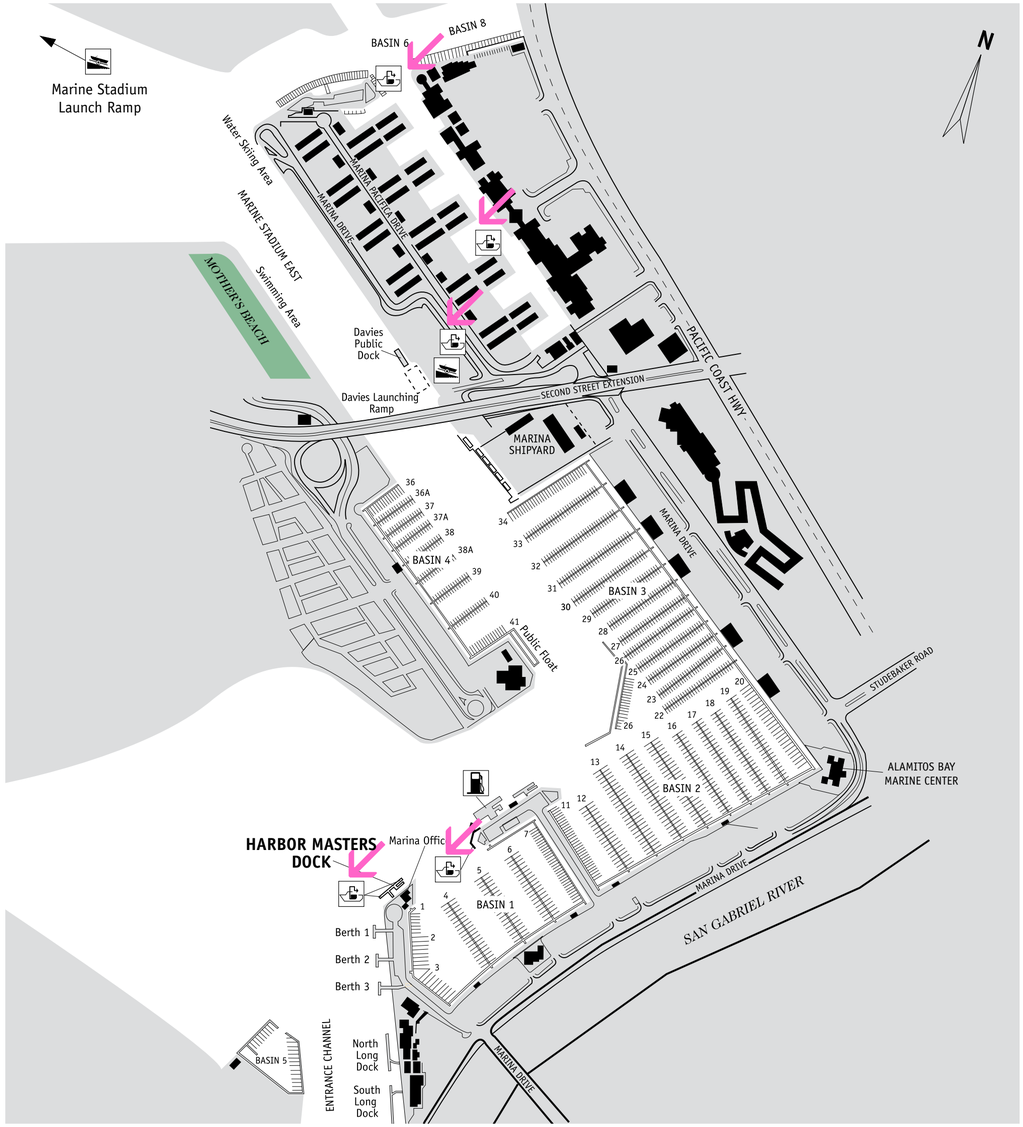


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Shoreline Marina Office, A dock far	Peristaltic	80	Operational	75	Operational	83	Operational
Shoreline Marina Office, A dock near	Peristaltic	83	Operational	78	Operational	81	Operational
Shoreline Marina, Public Dock, far	Peristaltic	67	Operational	86	Operational	62	Operational
Shoreline Marina, Public Dock, mid	Peristaltic	0	Non-Operational	0	Non-Operational	0	Non-Operational
Shoreline Marina, Public Dock, near	Peristaltic	33	Non-Operational	0	Non-Operational	0	Non-Operational

Shoreline Village marina scenic boats
Photo by John Hollenbeck

LA — PORT OF LONG BEACH / Los Alamitos



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Los Alamitos Davies Launching Ramp	Peristaltic	72	Operational	81	Operational	67	Operational
Los Alamitos Fire Department, Marine Station	Peristaltic	83	Non-Operational	70	Operational	75	Operational
Los Alamitos Harbor Master Dock, near	Peristaltic	56	Operational	64	Operational	56	Operational
Los Alamitos Harbor Master Dock, far	Peristaltic	89	Operational	81	Operational	89	Operational
Marina Pacifica, Slip #039 at Key 15	Peristaltic	94	Operational	94	Operational	94	Operational
Marina Pacifica, Slip #165 at Key 1	Peristaltic	74	Operational	83	Operational	68	Operational

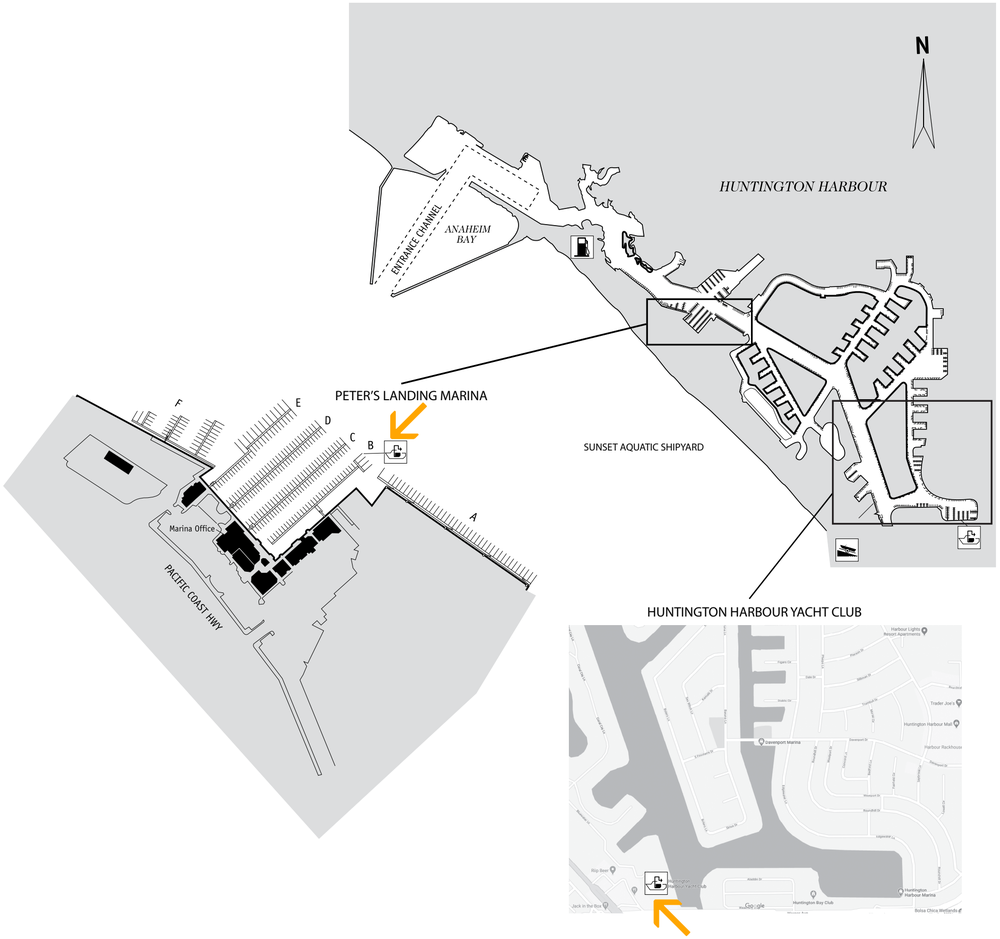
Photo by John Hollenbeck

ORANGE COUNTY

Huntington Harbour
Newport Harbor
Dana Point Harbor

Newport Harbor offers picturesque views
Photo by Christopher Chen on Unsplash

ORANGE — HUNTINGTON HARBOUR

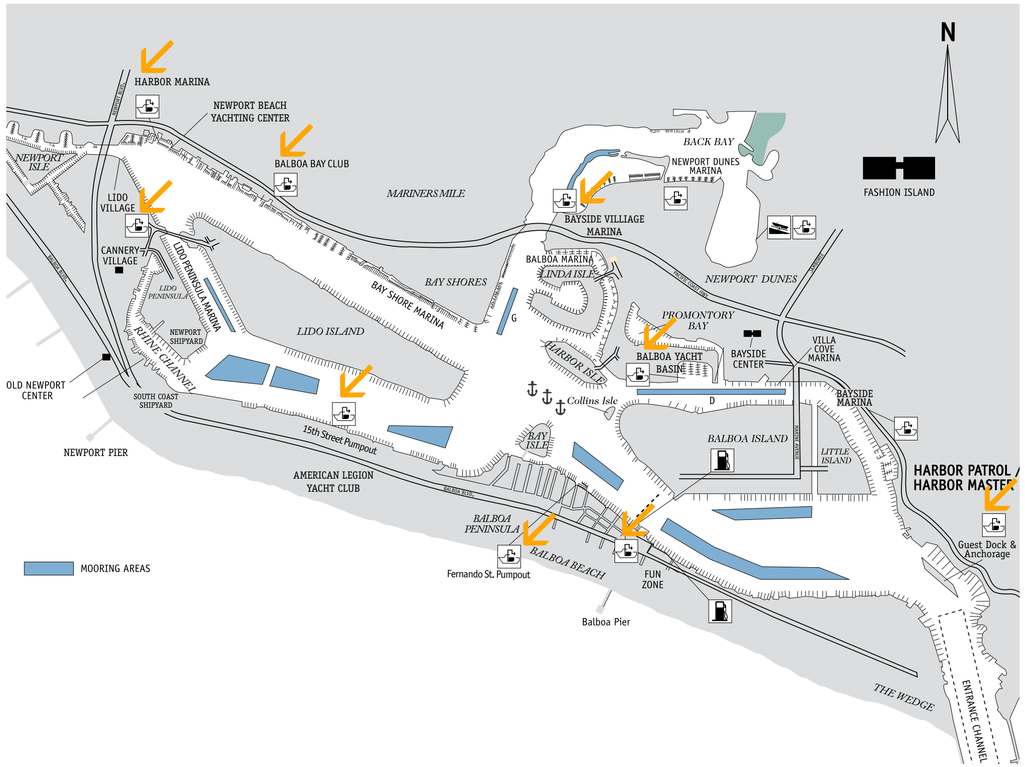


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Huntington Harbour Yacht Club, Fire Department	Diaphragm	90	Operational	94	Operational	97	Operational
Peter's Landing Marina, B Dock	Peristaltic	50	Non-Operational	84	Operational	73	Operational

Sunset at Sunset Aquatic Marina
Photo by John Hollenbeck

ORANGE — NEWPORT HARBOR

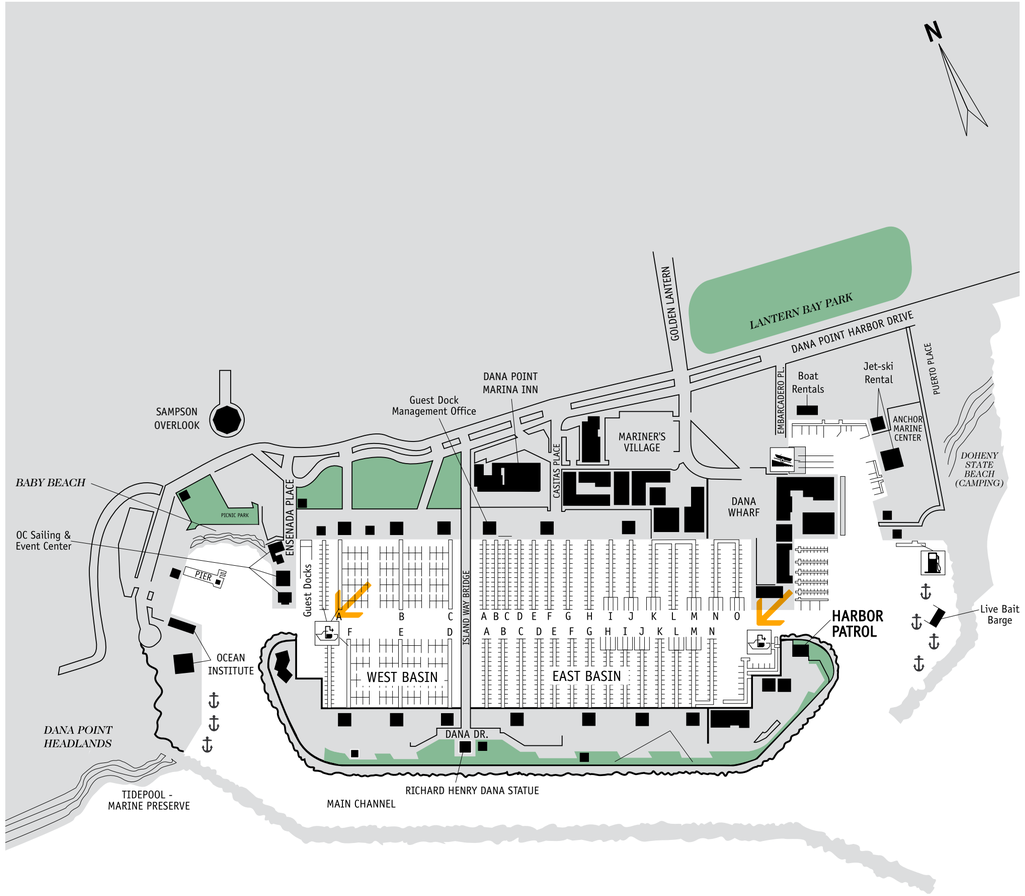


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
15th Street, far	Diaphragm	91	Operational	94	Operational	97	Operational
15th Street, near	Peristaltic	86	Operational	91	Operational	94	Operational
Balboa Bay Club	Peristaltic	87	Operational	94	Operational	90	Operational
Balboa Fun Zone	Peristaltic	78	Non-Operational	86	Operational	92	Operational
Balboa Yacht Basin	Peristaltic	94	Operational	86	Operational	83	Operational
Bayside Village Marina	Peristaltic	87	Operational	94	Operational	96	Operational
Fernando Street	Peristaltic	83	Operational	97	Operational	94	Operational
Lido Marina Village	Peristaltic	59	Non-Operational	74	Operational	77	Operational
Newport Beach Harbor Patrol	Peristaltic	28	Non-Operational	28	Non-Operational	57	Operational

Pink sunset in Newport Harbor
Photo by Jason Middlekauff

ORANGE — DANA POINT HARBOR



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Dana West Marina, A dock side tie	Peristaltic	68	Operational	81	Operational	84	Operational
Dana West Marina, F dock side tie	Peristaltic	84	Operational	79	Operational	80	Operational
Dana Point Marina, East Basin, Guest Dock, end tie	Peristaltic	82	Operational	50	Operational	48	Operational
OC Harbor Patrol	Peristaltic	78	Operational	-	Non-Accessible	-	Non-Accessible

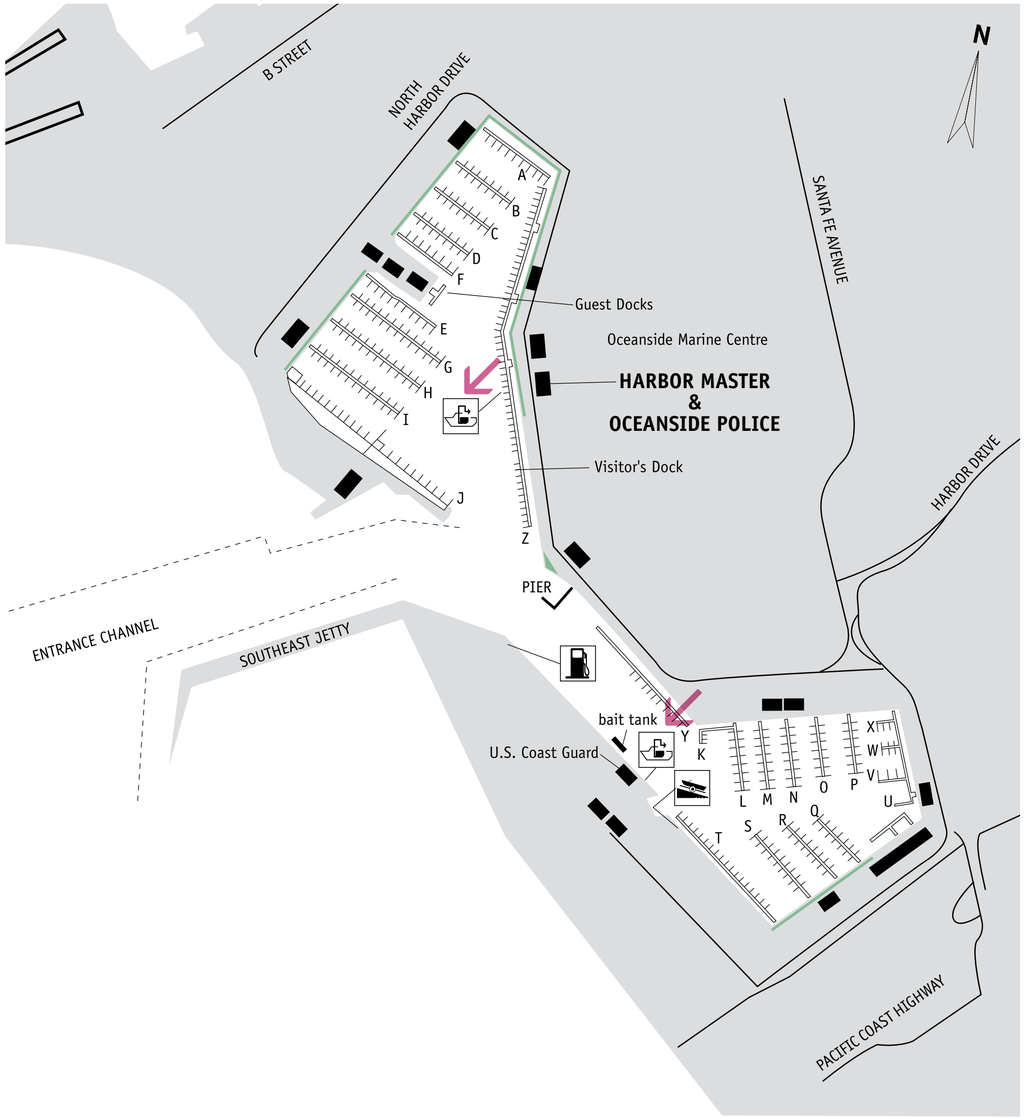
Serene Dana Point cliffs with boats docked
Photo by Pat Douglass

SAN DIEGO COUNTY

Oceanside Harbor
Mission Bay
San Diego Bay / Shelter & Harbor Islands
San Diego Bay / Glorietta Bay & South San Diego Bay

A view of downtown San Diego
Photo by Kim Riley

SAN DIEGO — OCEANSIDE HARBOR

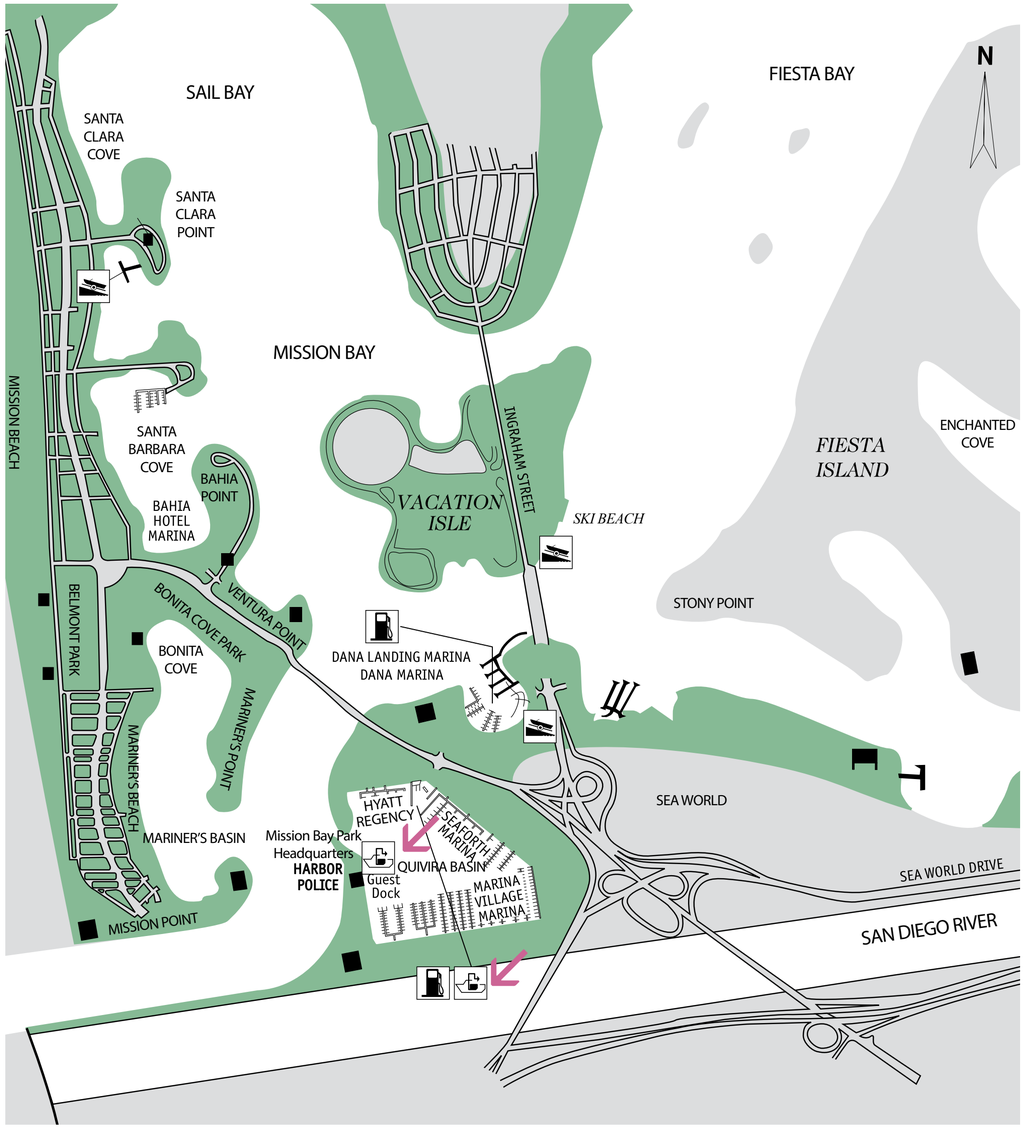


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Department of Harbor and Beaches, Office	Peristaltic	69	Operational	93	Operational	97	Operational
U.S. Coast Guard Auxiliary, far	Peristaltic	91	Operational	87	Operational	88	Operational
U.S. Coast Guard Auxiliary, near	Peristaltic	96	Operational	94	Operational	93	Operational

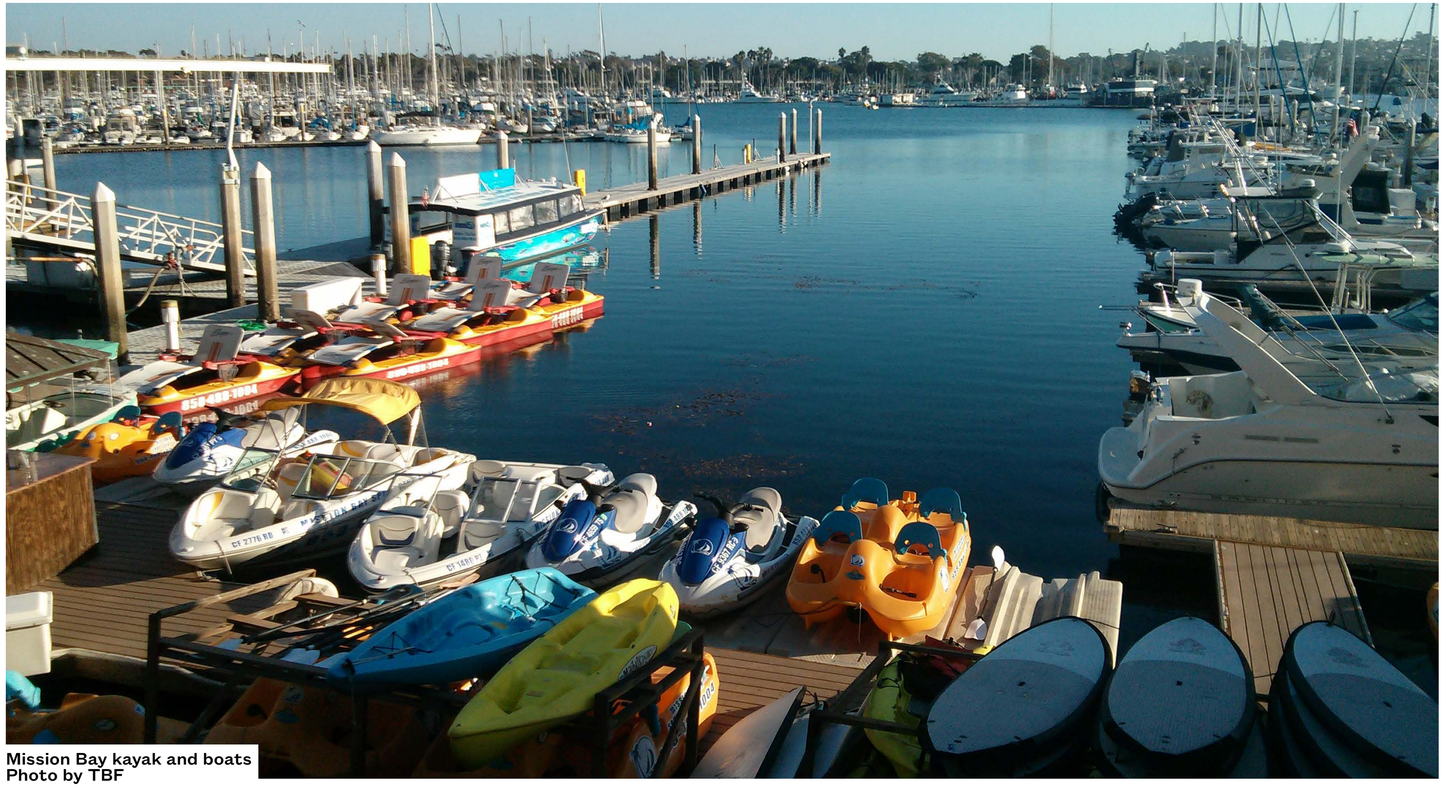
Majestic clouds approaching Oceanside Harbor
Photo by TBF

SAN DIEGO — MISSION BAY



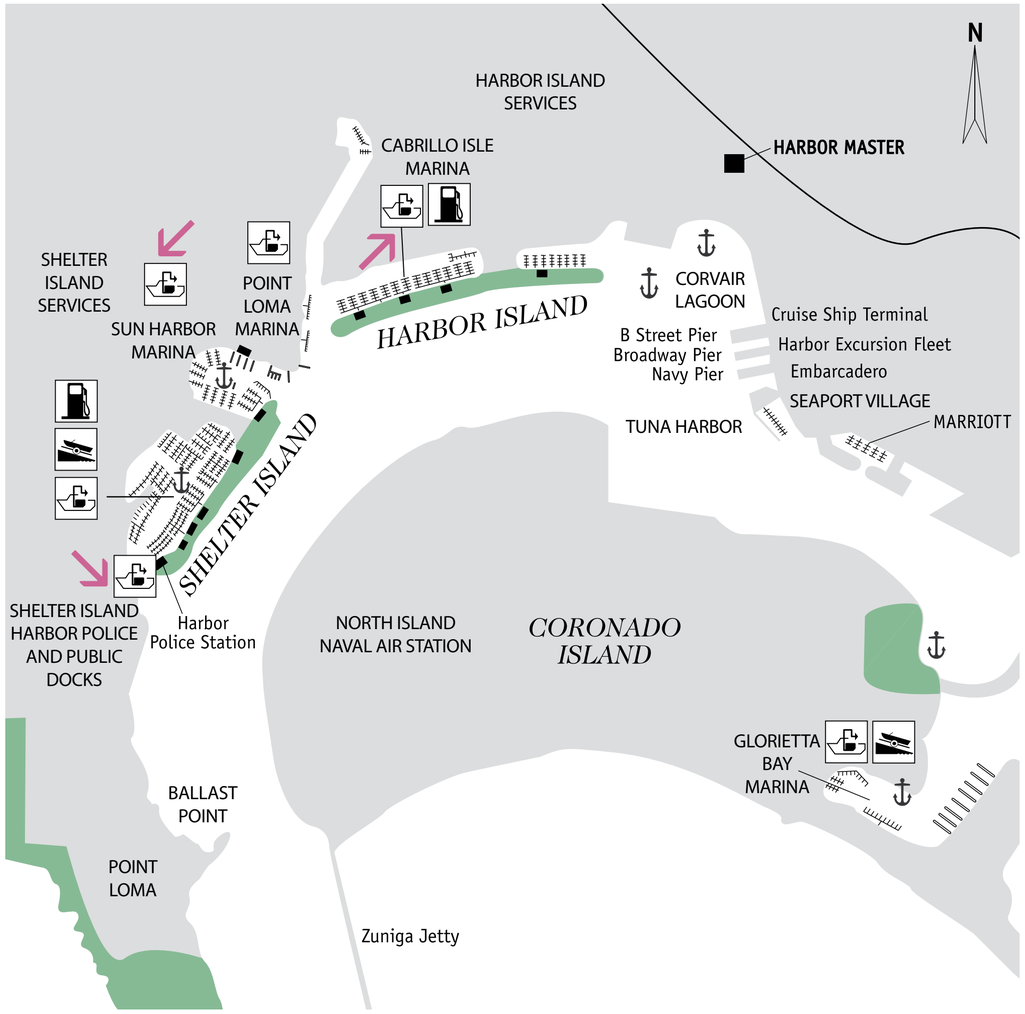
2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Hyatt Regency	Peristaltic	97	Operational	76	Non-Operational	22	Non-Operational
Mission Bay Park Headquarters, left	Peristaltic	83	Operational	56	Operational	33	Non-Operational
Mission Bay Park Headquarters, right	Peristaltic	94	Operational	94	Operational	33	Non-Operational



Mission Bay kayak and boats
Photo by TBF

SAN DIEGO — SAN DIEGO BAY / Shelter & Harbor Islands

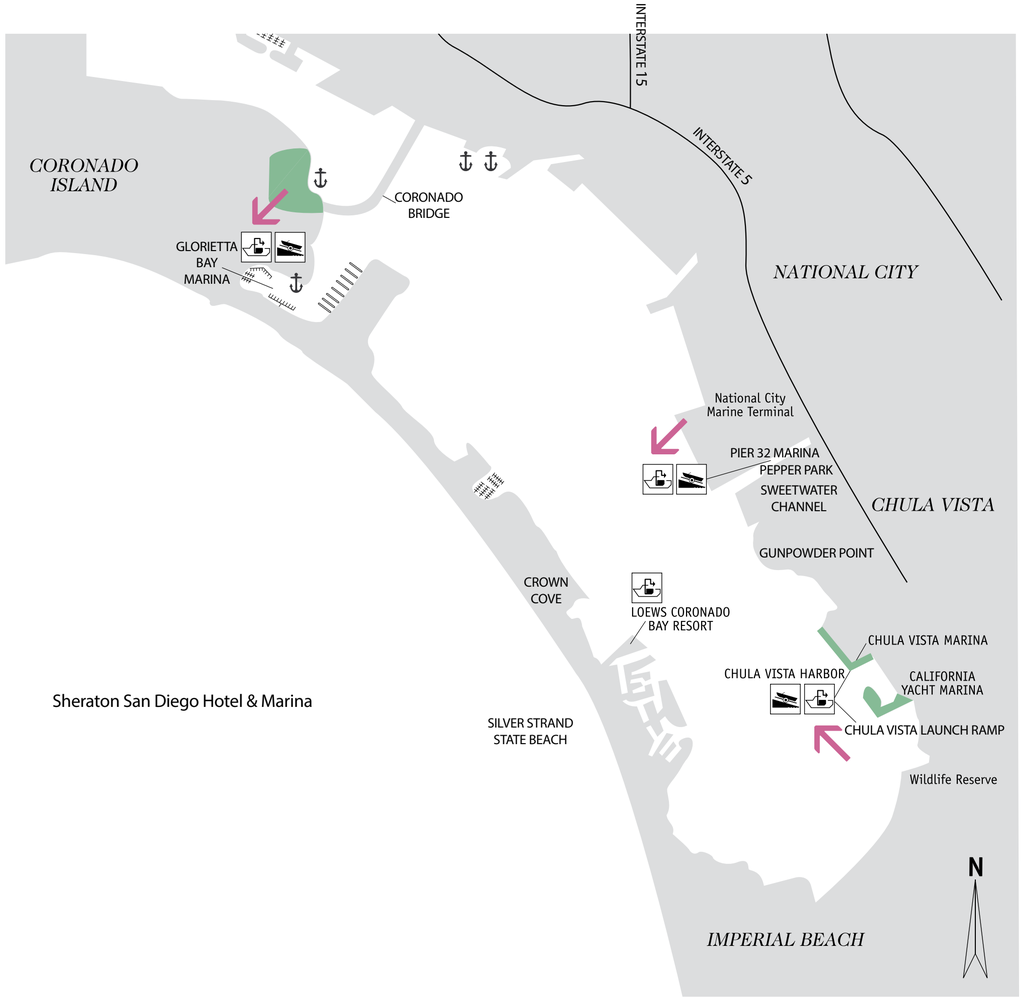


2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Laurel St. & Harbor Dr. / airport	Peristaltic	89	Operational	97	Operational	97	Operational
Shelter Island Harbor Police Dock, far	Diaphragm	53	Non-Operational	-	Non-Accessible	-	Non-Accessible
Shelter Island Harbor Police Dock, near	Diaphragm	69	Operational	-	Non-Accessible	69	Operational
Shelter Island Public Dock, far	Peristaltic	28	Non-Operational	-	Non-Accessible	87	Operational
Shelter Island Public Dock, near	Peristaltic	68	Operational	-	Non-Accessible	-	Non-Accessible
Sun Harbor Marina, near	Peristaltic	100	Operational	86	Operational	97	Operational
Sun Harbor Marina, far	Peristaltic	97	Operational	94	Operational	97	Operational

Gloomy day in San Diego Bay
Photo by TBF

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



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Chula Vista Launch Ramp	Peristaltic	68	Operational	-	Non-Accessible	97	Operational
Chula Vista Marina	Peristaltic	73	Operational	88	Operational	75	Operational
Glorietta Bay Marina, B dock left	Peristaltic	70	Operational	82	Operational	79	Operational
Glorietta Bay Marina, B dock right	Peristaltic	71	Operational	33	Non-Operational	79	Operational
Pepper Park Launch Ramp	Peristaltic	97	Operational	-	Non-Accessible	22	Non-Operational

Calm waters in San Diego Bay
Photo by TBF

SOUTHERN CALIFORNIA 2022 DUMP STATION OPERATIONAL STATUS

FACILITY	MOTOR TYPE	SPRING	SUMMER	FALL
San Luis Obispo Morro Bay, Tidelands Park	Peristaltic	Operational	Operational	Operational
Santa Barbara Harbor, Boat Launch	Peristaltic	Operational	Operational	Operational
Santa Barbara Harbor, Marina One	Peristaltic	Operational	Operational	Operational
Ventura Harbor, Ventura West Marina	Diaphragm	Operational	Operational	Operational
Huntington Harbor, Huntington Harbor Yacht Club, Fire Department	Diaphragm	Operational	Operational	Operational
Newport Harbor, Bayside Village Marina	Peristaltic	Operational	Operational	Operational
San Diego Bay — Glorietta Bay & South San Diego, Glorietta Bay Marina, B dock	Peristaltic	Operational	Non-Operational	Operational

TBF staff testing dump station operational status
Photo by TBF

Bayside Village Marina dump station
Photo by TBF

NORTHERN CALIFORNIA

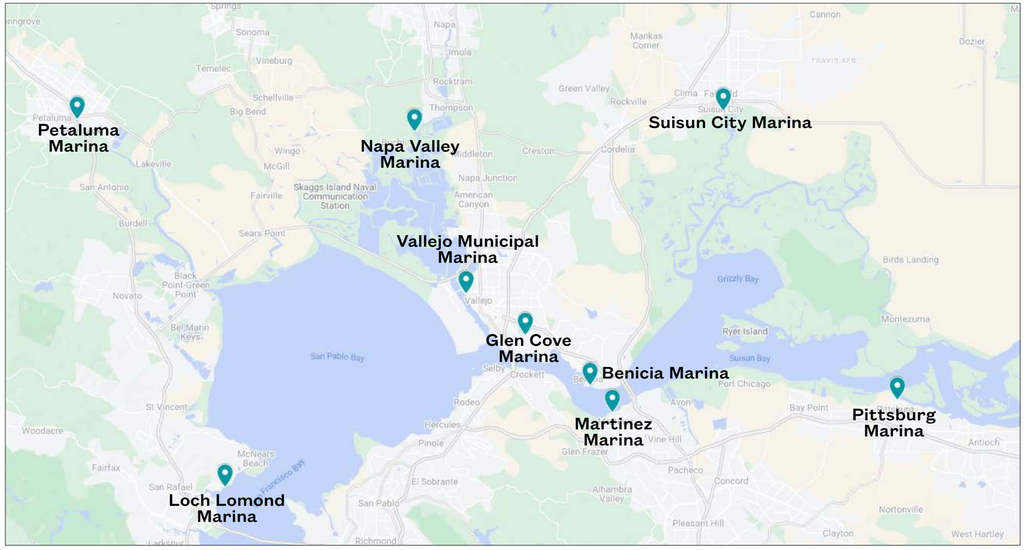
SAN FRANCISCO'S NORTH BAY

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

A sunny day view of Petaluma Marina
Photo by Liz Juvera

SAN FRANCISCO — **NORTH BAY**

2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS



Loch Lomond Marina
Photo by SFEP

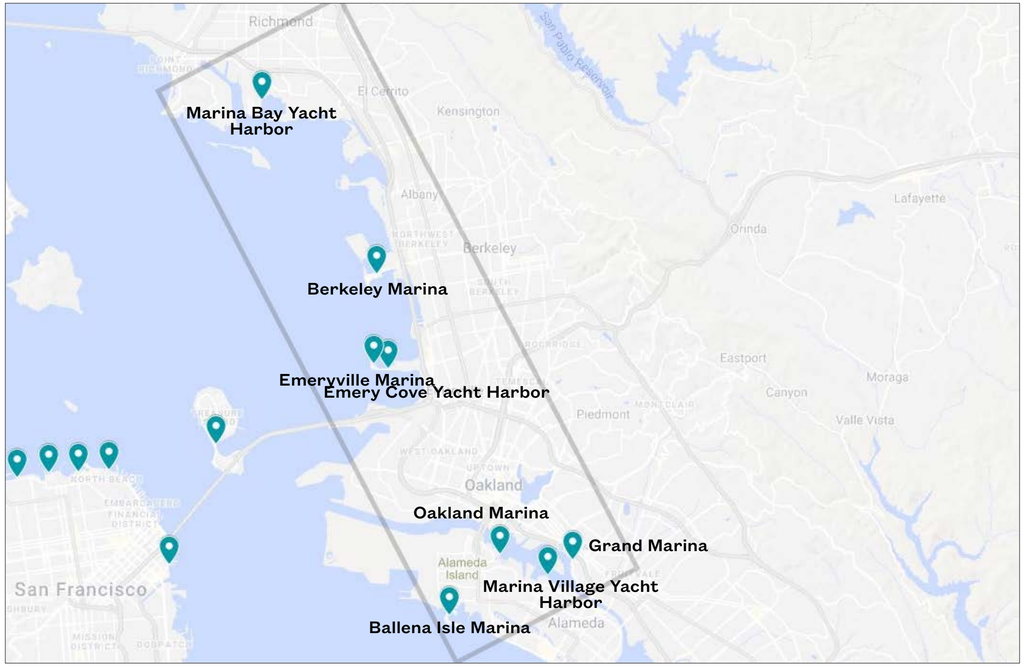
FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Benicia Marina	Peristaltic	92	Operational	83	Operational	67	Operational
Glen Cove Marina	Peristaltic	97	Operational	92	Operational	92	Operational
Loch Lomond Marina, Fuel Dock North	Peristaltic	74	Operational	73	Operational	80	Operational
Loch Lomond Marina, Fuel Dock South	Peristaltic	76	Operational	85	Operational	87	Operational
Martinez Marina	Peristaltic	97	Operational	97	Operational	94	Operational
Napa Valley Marina	Diaphragm	92	Operational	94	Operational	94	Operational
Petaluma Marina	Peristaltic	92	Operational	92	Operational	92	Operational
Pittsburg Marina, Fuel Dock North	Peristaltic	70	Operational	96	Operational	91	Operational
Pittsburg Marina, Fuel Dock South	Peristaltic	90	Operational	81	Operational	87	Operational
Pittsburg Marina, Guest Dock	Peristaltic	84	Operational	93	Operational	93	Operational
Suisun City Marina	Peristaltic	65	Operational	72	Operational	77	Operational
Vallejo Municipal Marina, Fuel Dock	Peristaltic	97	Operational	97	Operational	97	Operational
Vallejo Municipal Marina, J Dock	Peristaltic	80	Operational	78	Operational	78	Operational

SAN FRANCISCO'S 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

Boats berthed at Emery Cove Marina
Photo by Liz Juvera

SAN FRANCISCO — EAST BAY



Bright, cloudy day for berthers at Ballena Isle Marina
Photo by Liz Juvera

2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

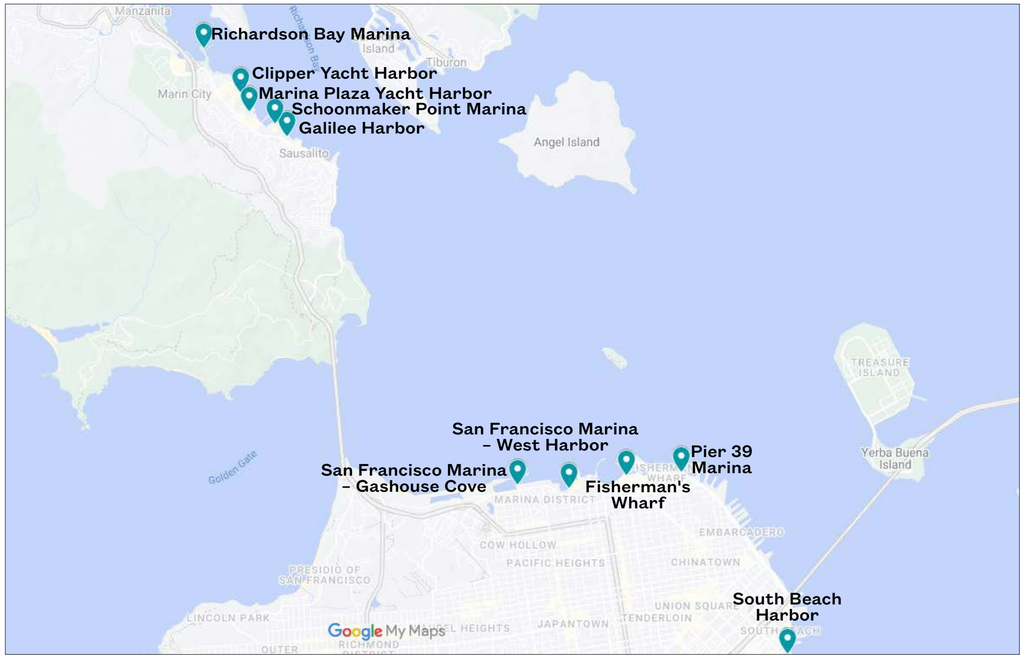
FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Ballena Isle Marina	Peristaltic	78	Operational	78	Operational	85	Operational
Berkeley Marina, G Dock	Peristaltic	89	Operational	84	Operational	84	Operational
Berkeley Marina, I Dock	Peristaltic	94	Operational	33	Non-Operational	92	Operational
Berkeley Marina, C Dock East	Peristaltic	80	Operational	84	Operational	89	Operational
Berkeley Marina, C Dock West	Peristaltic	89	Operational	89	Operational	33	Non-Operational
Emery Cove Yacht Harbor, Dock A	Peristaltic	33	Non-Operational	33	Non-Operational	33	Non-Operational
Emery Cove Yacht Harbor, Dock S	Peristaltic	71	Operational	77	Operational	60	Operational
Emeryville Marina	Peristaltic	68	Operational	77	Operational	83	Operational
Grand Marina	Peristaltic	94	Operational	94	Operational	94	Operational
Marina Bay Yacht Harbor, D Dock	Peristaltic	77	Operational	84	Operational	85	Operational
Marina Bay Yacht Harbor, G Dock	Peristaltic	72	Operational	82	Operational	81	Operational
Marina Village Yacht Harbor, Gate 8	Peristaltic	92	Operational	92	Operational	89	Operational
Marina Village Yacht Harbor, Gate 10	Peristaltic	92	Operational	89	Operational	33	Non-Operational
Oakland Marina, Jack London Square	Peristaltic	78	Operational	86	Operational	89	Operational

SAN FRANCISCO'S 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

A view from Richardson Bay Marina
Photo by SFEP

SAN FRANCISCO — **WEST BAY**



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Clipper Yacht Harbor	Peristaltic	91	Operational	86	Operational	97	Operational
Fisherman's Wharf	Peristaltic	0	Non-Operational	0	Non-Operational	0	Non-Operational
Galilee Harbor	Diaphragm	69	Operational	73	Operational	84	Operational
Marina Plaza Harbor	Peristaltic	73	Operational	94	Operational	89	Operational
Pier 39 Marina	Peristaltic	97	Operational	97	Operational	73	Operational
Richardson Bay Marina	Peristaltic	94	Operational	90	Operational	97	Operational
San Francisco Marina - Gashouse Cove	Peristaltic	79	Operational	89	Operational	89	Operational
San Francisco Marina - West Harbor	Peristaltic	33	Non-Operational	33	Non-Operational	91	Operational
Schoonmaker Point Marina	Peristaltic	51	Operational	88	Operational	90	Operational
South Beach Yacht Harbor	Peristaltic	90	Operational	91	Operational	33	Non-Operational

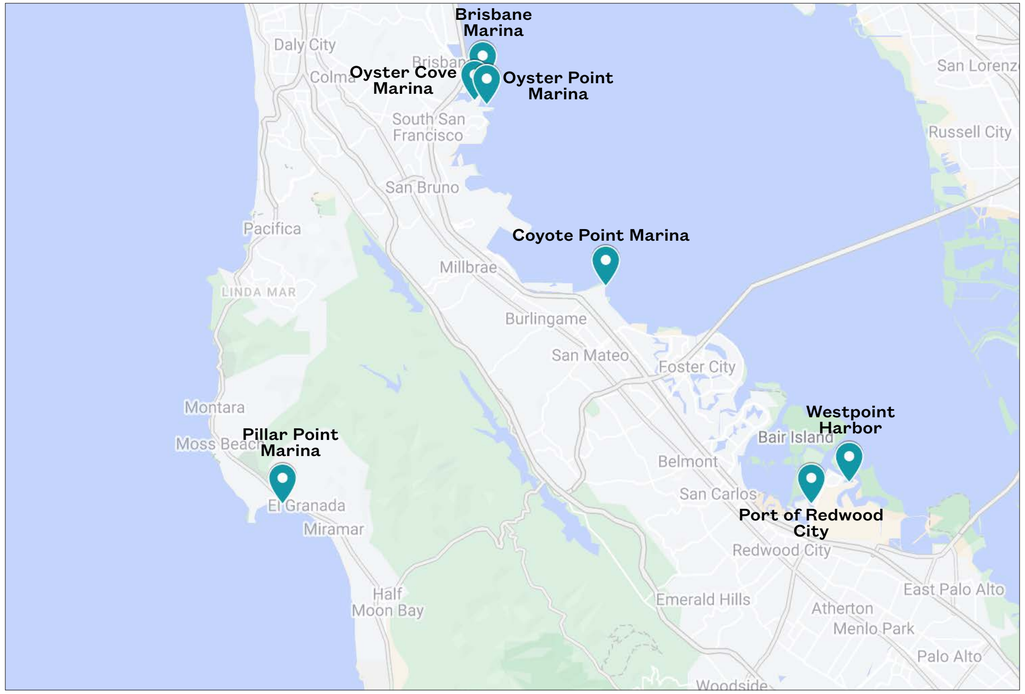
The San Francisco downtown skyline
Photo by SFEP

SAN FRANCISCO'S SOUTH BAY

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

Boats berthed at Westpoint Harbor
Photo by SFEP

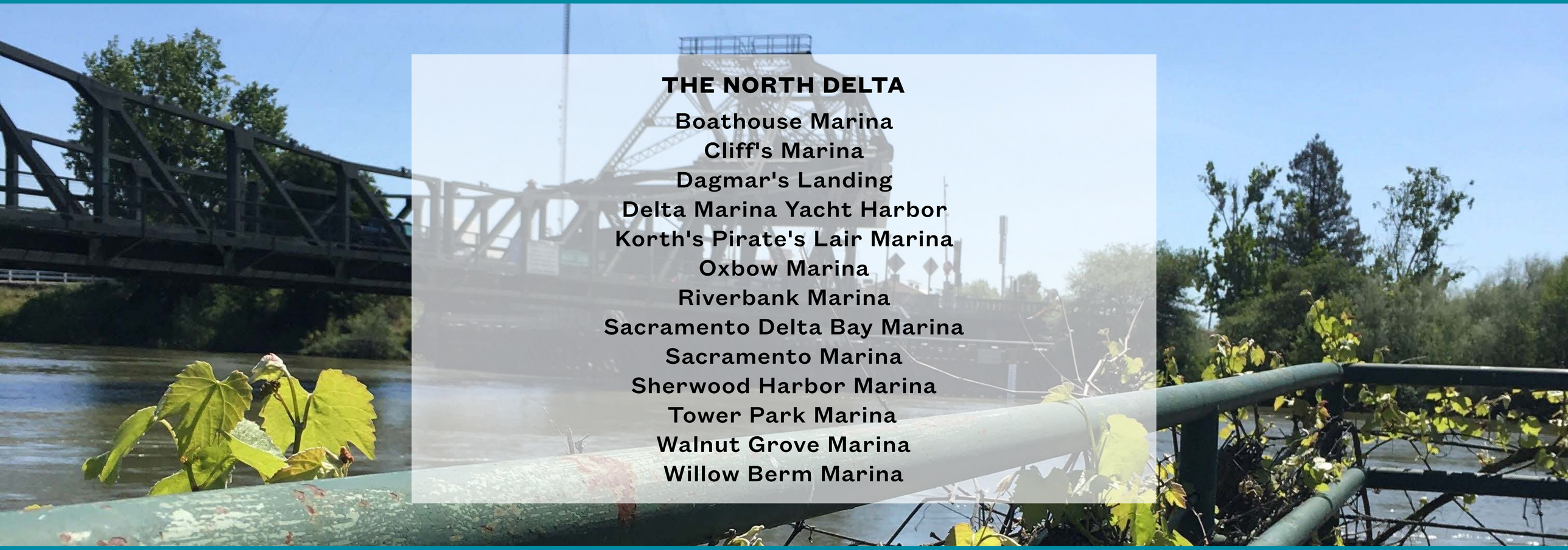
SAN FRANCISCO — SOUTH BAY



2022 PUMPOUT USABILITY SNAPSHOT AND OPERATIONAL STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Brisbane Marina	Peristaltic	80	Operational	94	Operational	94	Operational
Coyote Point Marina	Peristaltic	89	Operational	89	Operational	84	Operational
Oyster Cove Marina	Peristaltic	94	Operational	94	Operational	N/A	Location closed
Oyster Point Marina	Vacuum	22	Non-Operational	75	Operational	67	Operational
Pillar Point Marina	Peristaltic	94	Operational	94	Operational	94	Operational
Port of Redwood City	Peristaltic	94	Operational	94	Operational	94	Operational
Westpoint Harbor	Peristaltic	80	Operational	33	Non-Operational	80	Operational

Scene of boat jibs high in the sky
Photo by SFEP

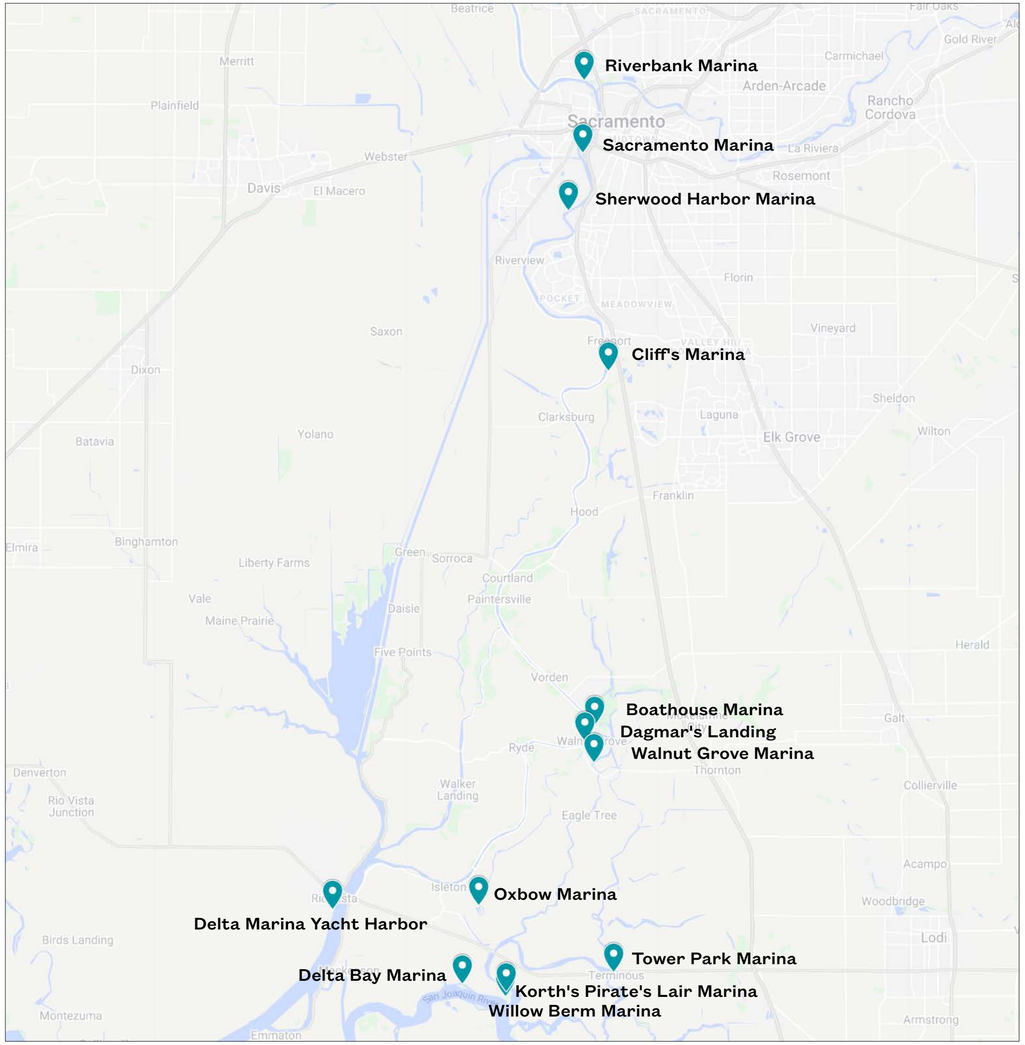


THE NORTH DELTA

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

A view of a bridge overpass in the Sacramento-San Joaquin Delta region
Photo by Natasha Dunn

SACRAMENTO-SAN JOAQUIN RIVER DELTA — NORTH DELTA



2022 PUMPOUT USABILITY SNAPSHOT AND STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Boathouse Marina	Diaphragm	80	Operational	N/A	Removed from monitoring	N/A	Removed from monitoring
Cliff's Marina	Diaphragm	84	Operational	85	Operational	84	Operational
Dagmar's Landing	Diaphragm	86	Operational	83	Operational	78	Operational
Delta Bay Marina	Peristaltic	96	Operational	93	Operational	87	Operational
Delta Marina Yacht Harbor	Peristaltic	33	Non-Operational	33	Non-Operational	72	Operational
Korth's Pirate's Lair Marina	Peristaltic	94	Operational	89	Operational	68	Operational
Oxbow Marina	Peristaltic	87	Operational	84	Operational	89	Operational
Riverbank Marina	Peristaltic	85	Operational	92	Operational	92	Operational
Sacramento Marina	Peristaltic	91	Operational	88	Operational	87	Operational
Sherwood Harbor Marina	Peristaltic	97	Operational	97	Operational	97	Operational
Tower Park Marina	Peristaltic	33	Non-Operational	91	Operational	60	Operational
Walnut Grove Marina	Peristaltic	97	Operational	92	Operational	78	Operational
Willow Berm Marina, Fuel Dock North	Vacuum	72	Operational	84	Operational	84	Operational
Willow Berm Marina, Fuel Dock South	Vacuum	67	Operational	87	Operational	87	Operational

A small rowboat tied to a dock on calm waters
Photo by Natasha Dunn

THE SOUTH DELTA

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

An empty boat ramp alongside houses on a levee in the Delta
Photo by Natasha Dunn

SACRAMENTO-SAN JOAQUIN RIVER DELTA — **SOUTH DELTA**

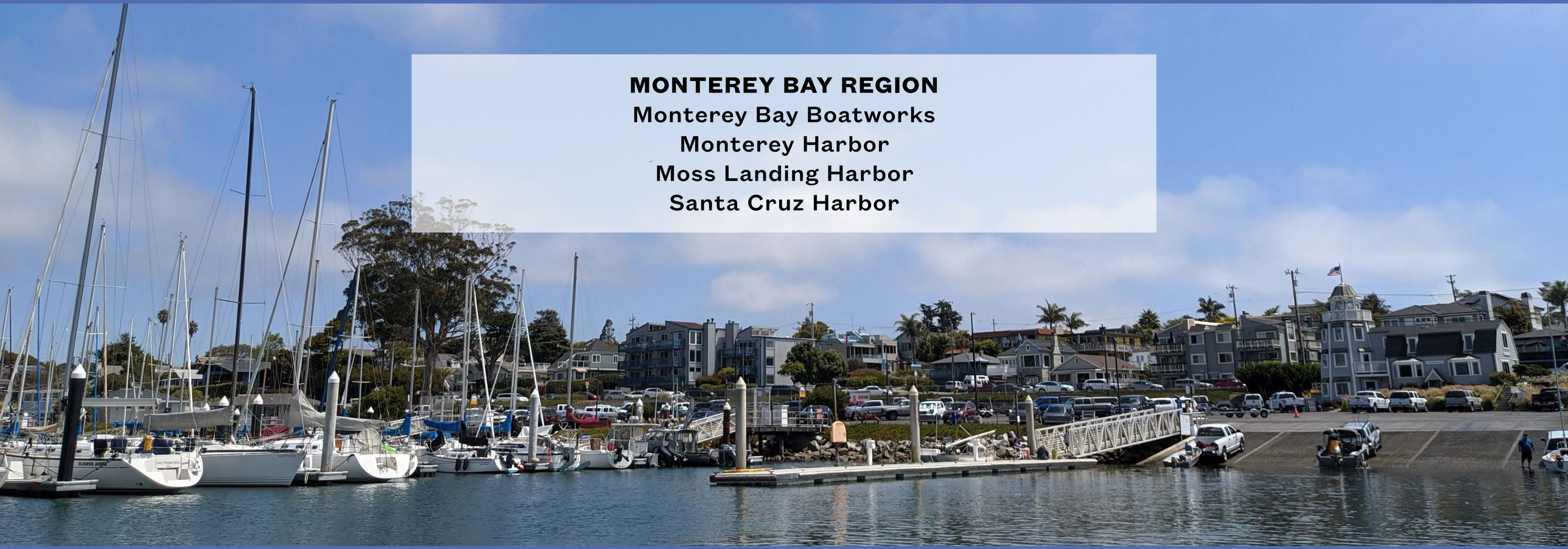
Serene waters and willow-lined banks in the Delta
Photo by Natasha Dunn

2022 PUMPOUT USABILITY SNAPSHOT AND STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Bethel Harbor, Service Dock East	Peristaltic	93	Operational	94	Operational	85	Operational
Bethel Harbor, Service Dock West	Peristaltic	94	Operational	94	Operational	87	Operational
Discovery Bay Yacht Harbor	Diaphragm	68	Operational	77	Operational	89	Operational
Driftwood Marina	Peristaltic	90	Operational	90	Operational	94	Operational
Eddo's Harbor	Diaphragm	28	Non-Operational	28	Non-Operational	28	Non-Operational
King Island Resort	Peristaltic	0	Non-Operational	0	Non-Operational	0	Non-Operational
Lauritzen Yacht Harbor, Fuel Dock East	Peristaltic	100	Operational	93	Operational	85	Operational
Lauritzen Yacht Harbor, Fuel Dock West	Peristaltic	88	Operational	91	Operational	88	Operational
Paradise Point Marina, Far Left Unit	Diaphragm	19	Non-Operational	N/A	Removed from monitoring	N/A	Removed from monitoring
Paradise Point Marina, Middle Left Unit	Diaphragm	17	Non-Operational	N/A	Removed from monitoring	N/A	Removed from monitoring
Paradise Point Marina, Middle Right Unit	Diaphragm	0	Non-Operational	N/A	Removed from monitoring	N/A	Removed from monitoring
Paradise Point Marina, Far Right Unit	Diaphragm	0	Non-Operational	N/A	Removed from monitoring	N/A	Removed from monitoring
River Point Landing	Vacuum	59	Operational	63	Operational	72	Operational
Stockton Downtown Marina	Peristaltic	N/A	Provided alternate	N/A	Provided alternate	85	Operational
Stockton Yacht Club	Peristaltic	71	Operational	81	Operational	74	Operational
Sugar Barge Resort	Diaphragm	81	Operational	73	Operational	73	Operational
Tiki Lagoon Resort	Vacuum	62	Operational	64	Operational	28	Non-Operational
Village West Marina	Peristaltic	87	Operational	92	Operational	97	Operational

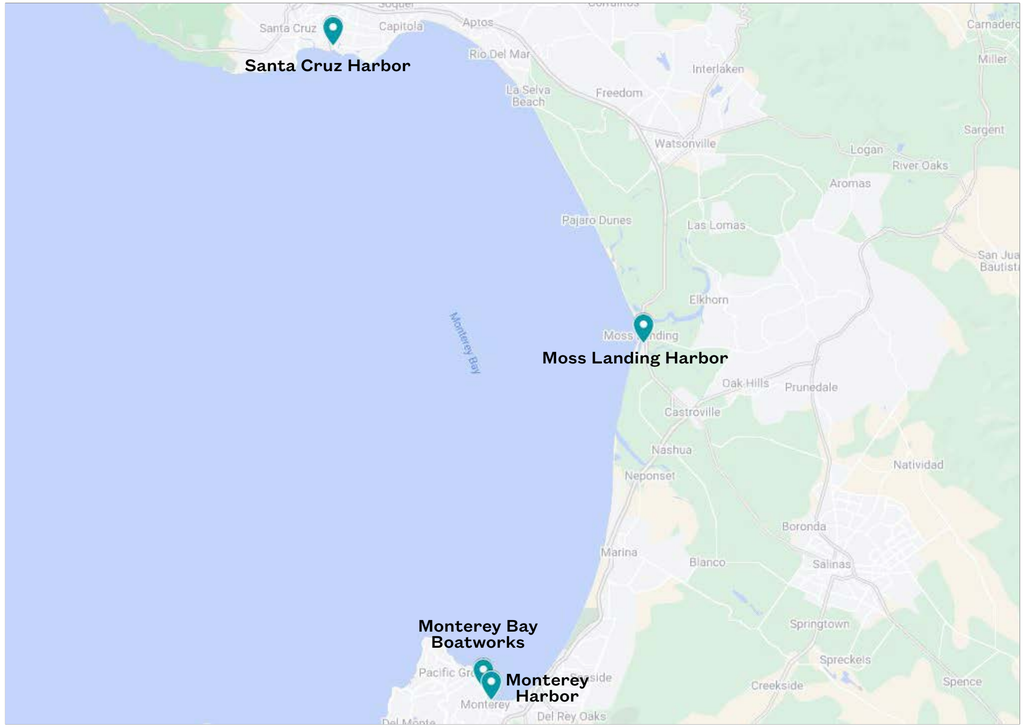
MONTEREY BAY REGION

Monterey Bay Boatworks
Monterey Harbor
Moss Landing Harbor
Santa Cruz Harbor



A busy boat ramp at the Santa Cruz Harbor
Photo by Liz Juvera

MONTEREY BAY — MONTEREY PENINSULA AND SANTA CRUZ HARBOR



2022 PUMPOUT USABILITY SNAPSHOT AND STATUS

FACILITY	PUMP TYPE	SPRING		SUMMER		FALL	
		USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS	USABILITY SNAPSHOT (%)	OPERATIONAL STATUS
Monterey Bay Boatworks	Peristaltic	94	Operational	94	Operational	94	Operational
Monterey Harbor	Peristaltic	92	Operational	94	Operational	92	Operational
Moss Landing Harbor	Peristaltic	N/A	Not yet monitored	57	Operational	77	Operational
Santa Cruz Harbor	Peristaltic	83	Operational	89	Operational	89	Operational

Commercial fishing boats parked in the Monterey Harbor
Photo by Liz Juvera

NORTHERN CALIFORNIA 2022 DUMP STATION OPERATIONAL STATUS

FACILITY	MOTOR TYPE	SPRING	SUMMER	FALL
Brisbane Marina	Peristaltic	Operational	Operational	Operational
Loch Lomand Marina	Peristaltic	Operational	Operational	Operational
Moss Landing	Peristaltic	Not yet monitored	Operational	Operational
Oyster Cove Marina	Peristaltic	Operational	Operational	Location closed
Pillar Point	Peristaltic	Not yet monitored	Operational	Non-Operational
Riverbank Marina	Peristaltic	Operational	Operational	Operational
Stockton Downtown Marina	Peristaltic	Not yet monitored	Not yet monitored	Operational
Sugar Barge Marina	Peristaltic	Non-Operational	Non-Operational	Non-Operational

Wind turbines and dramatic clouds stun while out monitoring in the Delta
Photo by Natasha Dunn

Boats berthed at the Santa Cruz Harbor
Photo by Liz Juvera

RESOURCES

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

SAN FRANCISCO ESTUARY PARTNERSHIP
www.sfestuary.org/boating

THE BAY FOUNDATION
www.santamonicabay.org

THE BAY FOUNDATION CLEAN BOATING MATERIALS
https://www.santamonicabay.org/what-we-do/projects/clean-boating

PUMPOUT NAV APP

iOS
https://itunes.apple.com/us/app/pumpout-nav-marina-pumpout-finder/id1148752109?mt=8

Android
https://play.google.com/store/apps/details?id=com.ecom.cleanvessel&hl=en

MOBILE PUMPOUT COMPANIES
https://dbw.parks.ca.gov/mobileservices