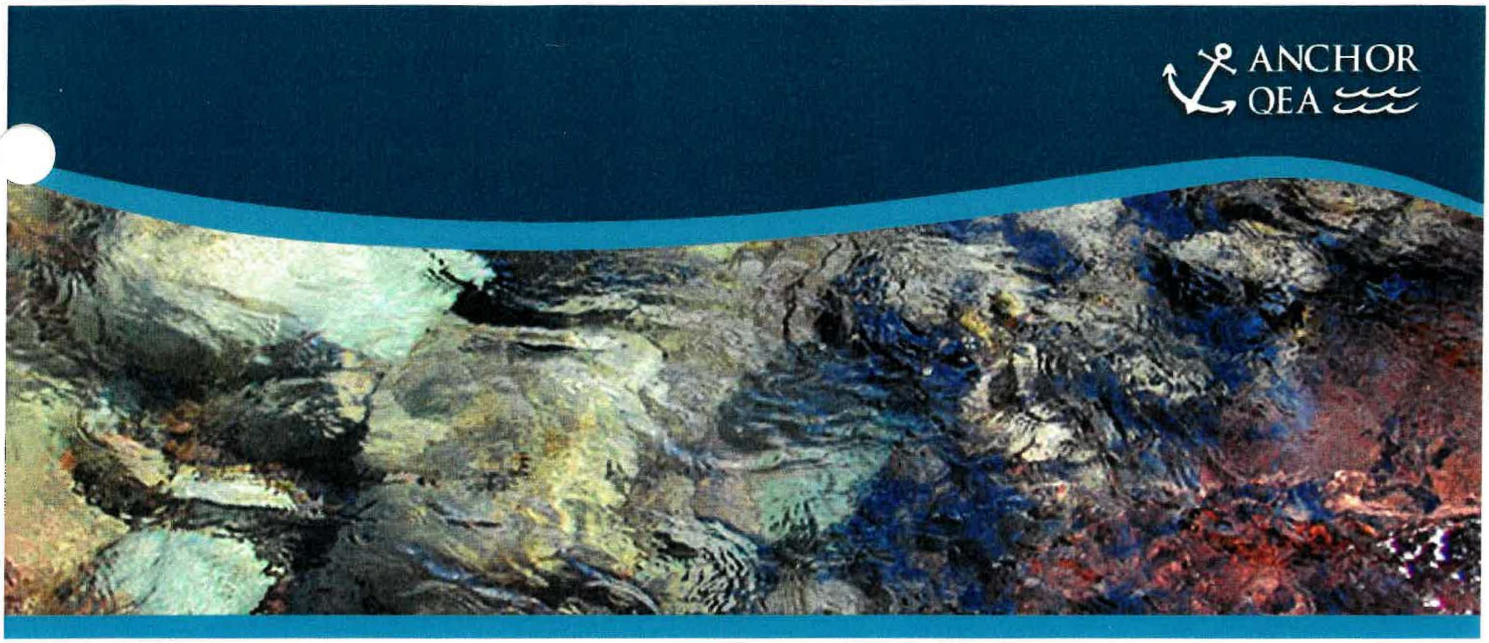

MARINA MARKET EVALUATION AND UPDATED CONDITIONS ASSESSMENT FOR THE OYSTER POINT MARINA

Prepared for

City of South San Francisco

400 Grand Avenue

South San Francisco, California 94080

Prepared by

Anchor QEA, LLC

130 Battery Street, Suite 400

San Francisco, California 94111

Confidential Work Product

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LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
Bay	San Francisco Bay
BCDC	San Francisco Bay Conservation and Development Commission
City	City of South San Francisco
DBW	California State Parks Division of Boating and Waterways
DMV	Department of Motor Vehicles
JPA	Joint Powers Agreement
Marina	Oyster Point Marina
NMMA	National Marine Manufacturers Association
PWC	personal watercraft
SMCHD	San Mateo County Harbor District
SUP	stand-up paddleboard
WETA	San Francisco Bay Area Water Emergency Transportation Authority
Yacht Club	Oyster Point Yacht Club
YC	yacht club
YH	yacht harbor

1 BACKGROUND

The City of South San Francisco (City) tasked Anchor QEA, LLC, with evaluating the market drivers and a proposed range of slip fees related to the potential repair and rehabilitation and/or full-scale renovation of the Oyster Point Marina (Marina). The Marina was originally constructed in the 1960s, offshore from the now closed Oyster Point Landfill, and was renovated and expanded in the 1980s and in 2012. The City is considering whether to terminate the joint powers agreement (JPA) with the San Mateo County Harbor District (SMCHD) prior to the JPA's contracted expiration in 2026. This would result in the City assuming ownership and operation of the Marina. Therefore, the City needs to understand the market demand, potential future capital reinvestment costs, and revenue streams prior to taking any action on the JPA.

As part of the overall study, we reviewed information provided in the *Oyster Point Marina & Park Marina Facility Condition Survey* (2014 Marina Condition Survey; Moffat & Nichol 2014) prepared by Moffatt & Nichol for the SMCHD in 2014, conducted site visits, reviewed survey and development information provided by the City, and collected market information from our subconsultant, Almar Marinas. We used this information to develop a proposed range of slip fees for two scenarios, and then used this information, along with proposed marina slip mix options, to estimate design and construction costs and projected revenue.

1.1 Marina History

The west basin of the Marina was originally constructed in the 1960s, north of the South San Francisco landfill. Operation and maintenance of the Marina and parking lot, which are located on land owned by the City, was transferred from the City to SMCHD in 1977 via a 49-year JPA. In the 1980s, SMCHD replaced the original docks in the west basin and expanded the Marina into the east basin with construction of a new breakwater. At highest available occupancy, the Marina had 589 slips. The Marina was redeveloped using $13,647,000 in loans from then California Department of Boating and Waterways (DBW, now California State Parks Division of Boating and Waterways). SMCHD also received DBW loans for Pillar Point Harbor, and in 1997 the total debt load was $19.77 million. According to SMCHD commission meeting minutes from April 6, 2016 (SMCHD 2016), and as explained by Commissioner Sabrina Brennan on her website SabrinaBrennan.com (2016),

these redevelopment loans have been completely paid off, and SMCHD has no other outstanding debt on its books.

The breakwater was modified in 2008, and Docks 9 and 10, with a combined total of 134 slips, were removed in late 2009 and early 2010 to make way for the South San Francisco ferry terminal, which opened in 2012. The guest dock (Dock 8) and Dock 11 were replaced during the 2012-13 fiscal year with concrete floating docks. The new Dock 11 is a reconfigured dock designed to comply with the operational requirements of the ferry terminal. This reconfiguration resulted in the loss of approximately 30 slips.

According to a conversation with SMCHD personnel (Smith 2016) and corroborated by the U.S. Army Corps of Engineers project website (Oyster Point Marina Section 107 n.d. and Oyster Point Breakwater Modification Project – Completion Ceremony, February 2013) and a local newspaper article (Murtagh 2013), as part of the replacement of Docks 8 and 11 in the 2012-13 fiscal year, Docks 12, 13, and 14 were modified and wave attenuating docks were added to Docks 11, 12, 13, and 14 to counteract the unforeseen swell/wave effects of the 2008 Oyster Point Breakwater Modification Project. No vessels are allowed to berth at the channel ends of Docks 11, 12, 13, and 14.

The current slip count for the Marina stands at 428 berths spread over 6 dock strings (Docks 1 to 6) in the west basin and 5 dock strings (Docks 8, 11, 12, 13, and 14) in the east basin. Drake Marina also operates the private Dock 7.

According to SMCHD's published capital improvement program (SMCHD 2016), electrical transformers on Docks 1 through 6 are to be replaced during the 2016-17 fiscal year, maintenance dredging is planned to occur later this decade, and planning for the replacement of Docks 12, 13, and 14 is scheduled to begin in the 2016-17 fiscal year with replacement scheduled later this decade.

1.2 Report Intent

The overall study consists of three components: market feasibility assessment (Task 1); existing marina and site condition assessment (Task 2); and marina layout modeling and associated cost estimates (Task 3).

Task 1 evaluates the market drivers for the Marina. Available data was used to develop two scenarios for a range of market-based slip lease rates (slip fees) for the Marina. The high end of the range of slip fees is based on replacing the Marina with a brand-new, state-of-the-art facility in terms of both amenities and operations, assumed to be part of a larger updated uplands development. The low end of the range is based on repair and retrofit of the existing Marina to the extent possible and replacement in-like-kind of docks which cannot be repaired.

Task 2 will review the 2014 Marina Condition Survey and verify and augment its assessment and recommendations based on a site visit. The site visit involves taking lead line measurements to assess the water depth throughout the Marina; reviewing the existing vessel conditions, which helps to determine the potential loss of tenants during a marina development and the resulting increase in slip fees; reviewing the existing Marina condition; and assessing additional Marina needs and site issues not already identified in the 2014 Marina Condition Survey. Task 2 does not include upland areas or vertical structures, and is focused on the Marina.

Task 3, once completed, will involve modeling Marina layouts under both slip fee scenarios to estimate design and construction costs and revenue projections. Tasks 2 and 3 will be completed at a later date.

2 MARINA MARKET EVALUATION

This section discusses the market area for the Marina, including evaluations of its existing slip mix, rates, and amenities; potential drivers for occupancy, in addition to market area demographics; competing marinas; and the regulatory permitting environment.

2.1 Market Area

The target market area for a marina typically consists of surrounding communities and inland areas within a 30- to 45-minute commute. Outside of the City of South San Francisco, areas within this driving distance to the Marina include Peninsula (San Mateo County) communities such as San Bruno, Pacifica, Burlingame, Foster City, San Mateo, Redwood City, and Menlo Park; the City of San Francisco; and portions of the northern Silicon Valley communities of Palo Alto, Los Altos, and Mountain View, as shown in Figure 1. Although communities such as Redwood City and San Francisco have a large number of slips within their city limits, long waitlists; poor marina condition, maintenance, or service; and/or high slip fees can drive tenants to competing facilities.

Although not the target market area for the Marina, other Silicon Valley communities in Santa Clara County, such as Sunnyvale, Cupertino, Santa Clara, Milpitas, and San Jose, can be considered opportunity areas outside of the target market area. These areas will not provide significant numbers of tenants for the Marina, but users may come from these areas if the Marina provides superior facilities, given the Marina's optimal location.

For purposes of this study, Santa Clara County communities are considered outside the primary market area, as are Marin, North Bay, and East Bay locations.

Figure 1
Market Area

2.1.1 Market Area Population and Income

Much of San Mateo and San Francisco Counties is defined by the heavy technology and biotechnology industries. Growth in these two industries has driven a 7.0% jump in population from 2010 to 2015 in the two counties, as shown in Table 1. The median age of residents for all three counties has increased between the 2000 Census and the 2010 Census, as has the number of family households.

Table 1
Market Area Population

County	Population (Census, April 1, 2000)	Population (Census, April 1, 2010)	Population (Estimate, July 1, 2015)	Population Growth (2000–2015)
San Francisco	776,773	805,235	864,816	11.3%
San Mateo	707,161	718,451	765,135	8.2%
2-County Total	**1,483,934**	**1,523,686**	**1,629,951**	**9.8%**
Santa Clara	1,682,585	1,781,642	1,918,044	14.0%
3-County Total	**3,166,519**	**3,305,328**	**3,547,995**	**12.0%**

Sources:
Bay Area Census, 2016a
Bay Area Census, 2016b
Bay Area Census, 2016c
United States Census Bureau, 2016

Table 2
Market Area Income

County	Median Household Income (Census, April 1, 2000)	Median Household Income (ACS, 2006–2010)	Median Household Income (ACS, 2010–2014)	Income Growth (2000–2014)
San Francisco	$55,221	$71,304	$78,378	41.9%
San Mateo	$70,819	$85,648	$91,421	29.1%
2-County Median	**$62,654**	**$78,068**	**$84,501**	**34.9%**
Santa Clara	$74,335	$86,850	$93,854	26.3%
3-County Median	**$68,861**	**$82,801**	**$89,557**	**30.0%**

Notes:
ACS = American Community Survey
1. 2-County and 3-County Median Household Incomes are population-weighted averages

Sources:
Bay Area Census, 2016a
Bay Area Census, 2016b
Bay Area Census, 2016c
United States Census Bureau, 2016

The counties of San Francisco and San Mateo have seen household incomes appreciate approximately 35% from a median income of $62,654 in 2000 to $84,501 in 2014, as shown in Table 2. Although inflation has remained rather flat over the past several years, median

home sale prices in San Francisco and San Mateo counties have increased approximately 50% over the past 10 years (July 2006 to June 2016), according to Zillow. Home sales prices in Santa Clara County increased a relatively tepid 33% over the same time period. On the surface, this would indicate that more household income is devoted to housing, thereby reducing disposable income available for activities such as boating.

However, the boating community has adjusted. According to our subconsultant Almar Marinas (Hayes 2016), the current trend is for two or more households to share in the cost of owning and maintaining a boat. As boat sales figures indicate, partnering on a vessel also better utilizes the amenity, because the boat will be on the water more often. This is beneficial to marina operations, because increased traffic improves demand for landside amenities and provides a form of security, in that people typically feel safe when there are others around. As will be explained later in this report, demand remains high at facilities with optimal location and high quality facilities.

2.1.2 Boater Demographic

Assuming steady boat ownership rates, the growth in population would lead to an increased number of vessels owned in the market area. The San Francisco Bay (Bay) is a major recreational amenity in the region and boating is a major use of this amenity. Based on state and national surveys, boaters with in-water berths are typically 35 to 65 years old and have household incomes at or above $75,000. This demographic describes the Marina Market Area households well because residents of the three counties mentioned have median ages in the late 30s and household incomes well above the national average for boaters. Furthermore, as residents and households in the market area mature, the target boating market grows as well. Therefore, we anticipate boat ownership rates will hold steady or increase over time.

In addition to geographic market areas, the primary target market for the Marina is recreational boaters who enjoy sailing, fishing, and various water sports on the waters of the Bay. Recreational boaters can be further sub-divided into multiple vessel types, ranging from personal water craft (PWCs) to trailerable vessels to mega-yachts. Most boaters within the Marina own small (32-foot or smaller) and average size (33- to 45-foot) vessels. There are

some larger vessels, including several 60-foot yachts. The target boat size, based on recent market trends, is vessels in the 35- to 50-foot range.

2.1.3 Demand for Boating

Marina occupancy rates and boat sales in California have been recovering since the boating industry was negatively impacted by the recession of 2008/2009. An article published by the Orange County Register (May 2014) listed new powerboat sales figures for California from 2004 through 2013, as reported by National Marine Manufacturers Association (NMMA). Separately, NMMA (2015 and 2016) published two powerboat sales summaries for the 2014 and 2015 calendar years. New powerboat sales figures include new vessels, new outboard engines, new trailers, and aftermarket accessories. Sales of new sailboats and accessories, new PWCs, and used boats are not included in this data. However, new powerboat sales figures correlate well with the overall boating industry. Table 3 provides the annual sales figures for California for the calendar years from 2004 through 2015.

New powerboat sales in California for the 2015 calendar year are up over 85% from the low level seen in 2010 and are back within 3% of 2008 sales levels. Although the sales numbers are not near the peaks of the mid-2000s, the numbers do indicate a recovering boating market, which, when coupled with high occupancy rates of competing marinas as described in Section 2.3, predict a strong demand for slips. Furthermore, according to a May 2014 YachtWorld article, 2014 sales of 26-foot- to 35-foot-long vessels trailed 2010 sales, while the number of 36-foot- to 45-foot-long boats sold in 2014 was significantly higher than in 2010. The increase in larger boat sales matches what Bay Area marina operators have seen: increased vacancy in slips under 35 feet in length and an increase in demand for boat slips 35 feet and greater in length.

Table 3

California New Powerboat and Accessories Sales

Year	Sales	Annual Percent Change
2004	$1,201,149,368	NA
2005	$1,274,045,713	6.1%
2006	$1,210,422,380	-5.0%
2007	$976,879,799	-19.3%
2008	$594,740,334	-39.1%
2009	$417,176,557	-29.9%
2010	$310,262,319	-25.6%
2011	$312,980,668	0.9%
2012	$367,016,212	17.3%
2013	$446,255,560	21.6%
2014	$546,774,476	22.5%
2015	$576,300,000	5.4%

Notes:
NA = not applicable
Sources:
Orange County Register article (May 25, 2014)
2014 U.S. Recreational Boating Statistical Abstract (NMMA, June 2015)
NMMA Press Release (May 2015)

2.1.3.1 Demand in Market Area

The DBW publishes aggregated annual vessel registration data collected from the Department of Motor Vehicles (DMV). This data is always divided by vessel use (e.g., pleasure, fishing, or industrial) and county of registration and will sometimes include an additional state-wide breakdown of registration by hull type (e.g., aluminum or fiberglass) and vessel length. However, it does not differentiate between sailboats, powerboats, PWCs, dinghies, or other types of registered vessels.

The latest available data is for the 2014 calendar year. In 2014, there were 9,172 vessels registered in San Mateo County and 3,207 vessels registered in San Francisco County and City. These values are the lowest figures since the start of the economic downturn. As a reference, there were 11,266 vessels registered in San Mateo County and 3,698 vessels

registered in San Francisco County and City in 2009, the last strong year of vessel registration before impacts of the recession were felt. As noted above, boat sales began to pick up in 2014, so we anticipate that the DMV registration figures will see improvement for the 2015 and current calendar years.

In addition to aggregating DMV vessel registration records, DBW also conducts assessments of general marina conditions, projects future slip demand, and conducts surveys of boater behaviors. In 2002, DBW released its *California Boating Facilities Needs Assessment* (2002 DBW Assessment; DBW 2002), which determined that additional slips were not needed in the San Francisco Bay Area until 2020. However, since that report was published, Peninsula Marina and Pete's Harbor (in Redwood City), which had approximately 750 combined slips, have closed, and the City of San Francisco Marina is currently in the process of redeveloping its two boat basins, which will reduce the number of available slips from 668 to 628. The replacement docks at Peninsula Marina (One Marina) and Pete's Harbor (Blu Harbor) have a combined 95 slips, and the new Westpoint Harbor in Redwood City added another 416 slips. This still leaves the San Francisco and San Mateo County Market Area with a net loss of approximately 280 slips since the 2002 DBW Assessment was published.

The 2007–2009 California Boater Survey (DBW 2011) published by DBW in 2011 received 2,446 responses for the 2007-2008 survey and 2,879 responses for the 2009 survey. The Bay Area was well represented, with 1,033 respondents listing the Bay Area as their region of residence. Although regional data is not available, between 34% (2009 survey) and 38% (2007–2008 survey) of respondents listed a marina as their boat storage location, and an additional 5% kept their vessel in dry boat storage. This appears to be applicable to the Bay Area, due to the fact that between 35% and 50% of Bay Area respondents stated that their vessel was 26-foot or longer. With the exception of dry boat storage or at-home berth, most vessels 26-foot and longer are kept at a marina.

Because the boating market is still in recovery, a marina berthing rate of only 30% will be used for this study. Multiplying that rate by the published DMV data for San Mateo and San Francisco counties from 2014 (12,379 registered pleasure craft) results in a demand for 3,714 slips. With 4,307 slips available in the two counties, that gives an overall anticipated occupancy of 86.2%.

Assuming that South Beach Harbor, the City of San Francisco Marinas, Treasure Isle Marina, and Bair Island Marina are all at 100% occupancy, the other marinas in the two counties would need to average 78.0% occupancy to absorb the balance of the total anticipated slip demand of 3,714 slips. That is a respectable occupancy rate (80% is a typical target occupancy), and one that is anticipated to increase with forecasted economic improvements in the boating market, as well as additional housing and commercial development opportunities driving more people to the market area. Any development at the Oyster Point Marina would further drive demand.

2.2 Oyster Point Marina – Existing Evaluation

The existing operational metrics and amenities of the Marina are discussed in this section.

2.2.1 Oyster Point Marina Slip Mix, Rates, and Occupancy

The slip mix and current slip rates for the Marina are provided in Table 4. These values are repeated for comparison purposes in Table 5 in Section 3.3.1, Slip Mix and Table 7 in Section 3.3.3, Rates.

Table 4
Oyster Point Marina Slip Mix and Current Rates

Slip Size	25'	30'	35'	40'	45'	50'	55'	60'
Mix/Count	28	165	100	16	66	18	1	34
Percentage	6.5%	38.6%	23.4%	3.7%	15.4%	4.2%	0.2%	7.9%
Monthly Rates (per lineal foot)								
Single Finger	NA	$7.70	$7.96	$8.01	$7.93	$7.98	NA	$7.96
Double Finger	$8.40	$8.05	$8.25	$8.27	$8.28	$8.30	$8.30	$8.31

Notes:
NA = Not applicable
1. Total percentage may not add to 100% due to rounding.
2. Rates are monthly rates per lineal foot of slip length. For total monthly rate, multiply rate by slip length.
3. Single Finger also may be called double-loaded slip/berth or double-wide. Each vessel has 1 finger.
4. Double Finger also may be called single-loaded slip/berth. Each vessel has 2 fingers.

Occupancy at the Marina is at 67%, which is lower than all other marinas in its Market Area except for the recently opened Westpoint Harbor. However, the occupancy rate at

Westpoint Harbor is expected to improve with time. Occupancy at the Marina has decreased by 10 percentage points from values provided in a 2009 study by Grand Marina (Alameda, CA), which was cited in the *2013 San Mateo County Harbor District Oyster Point Marina Business and Management Plan* (City of South San Francisco City Council 2015). The same 2009 Grand Marina study gave a region-wide occupancy rate of approximately 80% (out of 13,600 available slips). Therefore, region-wide marina occupancy have rebounded to pre-recession levels (current occupancy is at approximately 78% as noted in Section 2.1.3, Market Demand), while occupancy at the Marina has underperformed the market.

However, given the observed condition of the existing docks, especially Docks 12, 13, and 14; gravel parking lots; and flooding problems in the east basin parking lot, the Marina's occupancy for its state is reasonably strong. This assertion is supported by the occupancy rates presented in a strategic business plan prepared by the City of Brisbane for its Brisbane Marina in August 2006 (City of Brisbane 2006). The Brisbane Marina business plan revealed that in 2006, when most competing marinas in San Francisco, Brisbane, and South San Francisco were near or over 90% occupied (one exception was the Pier 39 Marina, at 75% occupancy), the Marina was only 54% occupied. In short, the Marina's prime location is supporting occupancy despite inadequacy in other areas.

2.2.2 Oyster Point Marina Amenities and Other Site Improvements

The Marina has been in operation since the 1960s, with a major renovation and expansion occurring in the 1980s. Although the Marina is located adjacent to open waters, it requires occasional dredging to maintain adequate water depths for vessels. The Marina was last dredged in 2007 and 2009. According to SMCHD board meeting minutes (SMCHD August 15, 2007), current Commissioner Sabrina Brennan's website (2011), and Salt River Construction's website (n.d.), 80,000 cubic yards of material was removed in the west basin in 2007 to improve water depths and 38,000 cubic yards of material was removed in the east basin in 2009 to improve water depths in the entrance channel and east basin in preparation for the new ferry terminal. SMCHD's capital improvement plan indicates that maintenance dredging will be performed within the next 2 to 4 years.

2.2.2.1 *Marina Amenities*

The Marina provides the basic amenities of electrical service (sub-metered and billed separately), lighting, security, potable water service, fire protection, dock boxes (upon request for an additional fee of $10 per month), parking, and basic restrooms. The highly desired amenities of heated restrooms with showers and laundry facilities are also provided for boaters. Cable TV connections are available, but there is no wireless internet (Wi-Fi) service available for tenants at the Marina. The separate monthly fee for dock boxes has led some marina tenants to install their own substandard dock boxes (UV-stabilized plastic rather than the higher quality fiberglass boxes) and hose reels. This results in a cluttered and non-uniform appearance.

Live-aboards are permitted at the Marina and are billed at a separate rate. The San Francisco Bay Conservation and Development Commission (BCDC), the regional entity with California Coastal Act authority, limits live-aboards to 10% of a marina's total slips. SMCHD financial reports and the 2014 Marina Condition Survey show between 40 and 45 live-aboards, within the BCDC limits. Although live-aboards provide a type of neighborhood watch and increased slips fees, the vessels often are poorly maintained and not seaworthy resulting in untidy vessels and fingers which detract from the appearance of a marina. Well-kept marinas typically prohibit live-aboards and have assertive enforcement of marina policies.

2.2.2.2 *Boating-related and Other Waterfront Site Amenities*

In addition to the Marina-provided amenities, a fuel dock and a pump-out dock operated by Drake Marine are available for use by Marina patrons. Drake Marine also operates a 400-space trailered boat storage yard (number of spaces per Drake Marine documentation), a private boat launch, a boat repair facility, and a marine shop. Ice is available for purchase. A two-lane public boat launch, reconstructed in 2008, is located at the eastern end of the Marina between Docks 13 and 14. A separate parking lot with 54 car-and-trailer spaces serves the public boat launch.

SMCHD requested bids to lease and operate the currently closed bait-and-tackle shop adjacent to the public boat launch. The bid closing date was set for May 11, 2016, but

SMCHD elected to postpone the award due to uncertainty surrounding the proposed upland development discussed in Section 2.2.3.1.

The Marina is located adjacent to a 33-acre park that includes picnic facilities and a sandy beach. The parking lot for the park is relatively small, but patrons can enjoy activities such as picnicking, sunbathing, windsurfing, kiteboarding, or hand launching of kayaks. A separate non-motorized vessel (windsurfing) launch ramp for kayakers, windsurfers, and kite boarders is located at the southeast corner of the landfill, near the east-facing 300-foot-long public fishing pier. Both the windsurfing launch ramp and the fishing pier were constructed in 1998. Several primary and overflow parking lots serve the fishing pier and windsurfing launch ramp. The San Francisco Bay Trail also runs through the park along the waterfront and connects Oyster Point to points throughout the region.

The Oyster Point Yacht Club, based at the Marina, provides a hub for local boaters. The yacht club welcomes boaters from other marinas and holds monthly sails to other marinas in the San Francisco Bay and Delta regions. This yacht club does not own or rent vessels; all members have their own boats.

2.2.3 Upland Development

With the exception of boater bathrooms and the nearby Inn at Oyster Point hotel, the Marina is relatively isolated from dining, shopping, and other landside amenities. Opportunity exists to improve landside amenities for boaters and make the Marina more inviting to non-boaters by redeveloping the City-owned uplands property, including parking lots, leased property, and Oyster Point Park.

2.2.3.1 Development Restrictions

The City-owned property is zoned according to the Oyster Point Specific Plan District. Allowable uses include the following:

- Vessel rental, repair, and storage (e.g., boat rentals, a fuel dock, or a boat yard)
- Business services
- Commercial recreation (e.g., a marina)
- Public recreation (e.g., a fishing pier or park)

- Public and private clubs (e.g., a yacht club)
- Coffee shops and restaurants
- Lodging (limited to a maximum of 2 hotels with no more than 350 total rooms)
- Offices (professional/business and medical/dental)
- Research and development
- Parking
- Personal services (e.g., a barber shop)
- Retail sales including food stuffs sales, but no convenience stores

Beyond what is permitted by the zoning code, no land use restrictions for redevelopment of the landfill site were included in either the *Joint Technical Document – Oyster Point Landfill* (Gabewell and PES Environmental 2000) prepared by Gabewell and PES Environmental or in the Regional Water Quality Control Board's *Waste Discharge Requirements Order No. R2-2000-0046* (RWQCB 2000). Buildings currently erected on the site are the Oyster Point Yacht Club, Drake Marine boatyard and storage, SMCHD office, SMCHD maintenance facility, bait shop, and Marina and park restrooms. Existing and new buildings can be constructed on the site as long as the designs account for settlement from landfill subsidence, seismic loading and liquefaction associated with construction on a former landfill, vapor prevention and monitoring, and sea level rise. Although pile-supported foundations are not required, it is recommended that any new structure be constructed on a pile-supported foundation to mitigate landfill subsidence and liquefaction in a seismic event.

2.2.3.2 *Proposed Oyster Point Redevelopment and Opportunities for the Marina*

The office and industrial area in which the Marina is located is currently undergoing a transformation. Several development projects are under construction or being planned for the area east of the 101 Freeway. The City has entered into a development agreement with Oyster Point Development, LLC, (a 100% owned subsidiary of Greenland USA) on a new life sciences office and research park on approximately 42 acres of land adjacent to the Marina. The current plans call for constructing mid-rise buildings overlooking both marinas in South San Francisco, realigning Oyster Point and Marina boulevards, enhancing the existing waterfront park and beach, improving drainage and parking areas at the Marina, and

demolishing the existing boat yard and dry boat storage facility to grade and prepare the parcel for a future waterfront hotel. This latter project is to replace the Inn at Oyster Point, which will be demolished as part of the site redevelopment.

The dry boat storage facility slated for closure, which has capacity for 400 vessels, according to Drake Marine's website (2016), appears to house only approximately 180 boats, a majority of which are in the 20- to 30-foot range. Given the size of these vessels, some may opt for in-water berthing, but most will likely find another dry storage facility. Although a functional amenity will be lost by the yard's closure, the aesthetic gains and gains in landside space for other uses in future development will compensate for the loss. It should be noted that until a hotel is developed on the site, agreements indicate that the parcel may be used for dry boat storage. Also, the lease agreement for the boat repair and dry boat storage yards includes water parcels used for a boarding float, a queuing dock, in-water slips, a fuel dock, and a public pump-out dock. Whether these water parcels transfer to the new leaseholder or revert to SMCHD operation is not clear based on available documents. The fuel and pump-out docks are critical features of the Marina and need to be maintained.

Overall, the proposed development, inclusive of a hotel, should drive additional demand at the Marina. The improved upland amenities, open spaces, parking, and access will improve desirability of the Marina. Furthermore, with the realignment of the roads in the area and demolition of the boat yard and storage facility, the Marina will no longer be hidden from view. The Marina will become a focal point of the waterfront given its prominent location, new amenities, and the sizeable daytime population that the proposed development will bring.

2.2.3.3 Yacht Club

The existing Oyster Point Yacht Club (Yacht Club), which has been in operation for more than 50 years, is fairly basic, with a venue used for Friday dinners and Sunday brunches and available for event rental by members and non-members. The club's most recent newsletter (Oyster Point Yacht Club, November 2015) noted that membership is down. The condition and vibrancy of the Yacht Club is reflective of the Marina. Improving both the Marina and the Yacht Club will benefit both entities. Although few Bay Area yacht clubs can be a

marquee club such as the St. Francis Yacht Club, the Yacht Club can become successful and host events and provide improved landside recreational, dining, and event amenities to members and Marina tenants. Furthermore, a successful Yacht Club can increase the number of visitors to the site, serve as marketing for the Marina, and provide an expanded base of tenants.

2.2.4 Other Potential Drivers of Occupancy for Oyster Point Marina

Other potential occupancy drivers for the Marina include the Marina's location within the Bay, including proximity to waterfront attractions; availability of storage and other amenities for non-motorized recreational vessels; public and private ferry service to San Francisco, the East Bay, and points beyond; and commercial enterprises.

2.2.4.1 Location within the Bay and Proximity to Attractions

The primary attractions of the Marina include its central location within the Bay, proximity to major population centers and attractions within the Bay, and quick access to the Bay. As alluded to in Section 2.1, Market Area, the Marina is approximately 12 miles from the San Francisco financial district (30 minutes by car), approximately 25 miles (30 minutes by car) to Palo Alto, and approximately 40 miles (60 minutes by car) to downtown San Jose. To access the open waters of the Bay, boaters simply have to sail outside the confines of the breakwater. Unlike many of the marinas in Redwood City, Oakland, and Alameda, there is no restricted-speed channel that a boater must sail down to access the Bay.

Once beyond the breakwater, a boater will find many attractions in the Bay within a reasonable sailing distance. The Marina is approximately 13 nautical miles (45 to 60 minutes sail) from Alcatraz Island, 16 nautical miles from Sausalito and Angel Island State Park, and 14 nautical miles from Redwood City. The Marina is a short sail away from the iconic San Francisco skyline, Golden Gate Bridge, the Pacific Ocean, and various attractions around the Bay.

2.2.4.2 Non-motorized Recreational Vessels

Beyond berthing of power boats and sailboats, marinas offer additional on-water recreational and educational options, such as storage for kayaks, stand-up paddleboards (SUPs), rowing

shells, PWCs, and dinghies, as well as youth and educational sailing clubs. The latter are usually part of a yacht club or a not-for-profit foundation designed to introduce youth and beginners to sailing. These clubs also help attract a younger set of potential customers (parents of youth sailors) to the marina. Space for these not-for-profit sailing clubs is usually donated as goodwill towards the local boating community.

Storage for kayaks, SUPs, and PWCs is usually provided at a nominal fee to attract tenants to the marina. PWC storage also can be rented to patrons who do not have a place to store their PWC or who like to get on the water quickly and do not want to wait in line at the boat launch on a busy weekend. The Marina has a kayak storage rack near the Harbormaster Building and across from the Dock 8 gangway. Placing a smaller number of racks on the shoreside of each dock string will improve kayak accessibility and reduce the clutter of kayaks on fingers and in slip water space. Dinghy basins or shallow-water side ties typically are used by boat maintenance contractors and divers who perform work in their home port and surrounding marinas, which for the Marina would include Oyster Cove and Brisbane marinas.

As discussed in Section 2.2.2.2, Oyster Point Marina offers a windsurfing launch ramp on the southeast side of the landfill. Hand launching of kayaks can be performed at the protected beach at the west end of the Marina basin. Improved marketing could enhance public knowledge of these unique recreational amenities.

2.2.4.3 Other Drivers

Additional drivers include transient use, patrons of the ferry service, commercial enterprises, and event cruises. The Marina has a 155-foot-long guest (transient) dock (Dock 8), but there currently are no destination amenities within Oyster Point Marina itself. The closest restaurant is located at the Inn at Oyster Point, the hotel adjacent to the Marina property. There are several R&D and office buildings surrounding the Marina and other dining and hotel options nearby.

A ferry boat terminal is located at the Marina. Since service began in June 2012, annual ridership has grown to more than 107,000 riders for the 2014-2015 fiscal year. The San

Francisco Bay Area Water Emergency Transportation Authority's (WETA's) 2015 annual report (published on September 3, 2015; WETA 2015) shows that more than 440 riders per day boarded or disembarked at the South San Francisco ferry terminal in the first half of the 2015 calendar year. With the developments proposed or under construction in the Oyster Point area, as well as job growth in San Francisco and Oakland (the two primary destination terminals), ridership is anticipated to continue to climb. In addition, SMCHD is negotiating with Prop SF, LLC, for a private commuter ferry service serving Genentech employees.

Commercial enterprises, including sport fishing, dinner and other event cruises, charter boats, day-sail boat rentals, and PWC rentals, offer additional revenue generators for a marina. Deep-sea fishing and event cruises typically use larger vessels in the 80- to 150-foot range, requiring large slips and fairways. The water space these large vessels use is offset by the traffic they generate for onshore offerings, including bait and tackle shops, souvenir shops, and restaurants.

South San Francisco is the birthplace of Genentech and home to a vibrant biotechnology industry. With new developments proposed and under construction in the Oyster Point area, it is anticipated that the local worker population and business trips to the area will increase. This has the potential of creating a corporate events cruise market. Given the local household income and proximity to major employment centers, charter boat rentals for day sailing or fishing may be another commercial enterprise opportunity.

2.3 Evaluation of Local Competing Marinas

Local marinas are facilities that can be considered competitors to the Marina, either due to proximity to the Marina or due to the relative attractiveness of superior facilities or proximity to landside attractions, as evidenced by wait lists. Proximity is considered not only based on the distance in miles from the Marina and its target market area, but also takes into account other limiting factors such as traffic, tolls, and location within the Bay. For these reasons, marinas on the Pacific Ocean, across the Golden Gate (Marin County), and along the East Bay and beyond are not considered in this evaluation. As described earlier in this report, the Marina's competitors are considered to be in the City of San Francisco and on the Bay side of San Mateo County, and are shown in Figure 1.

The top four competitors are as follows:

- Brisbane Marina (Brisbane)
- Coyote Point Marina (San Mateo)
- Oyster Cove Marina (South San Francisco)
- South Beach Harbor (San Francisco)

Other marinas located in San Mateo and San Francisco counties include the following:

- Bair Island Marina (Redwood City)
- Pier 39 Marina (San Francisco
- Port of Redwood City Marina (Redwood City)
- Redwood Landing Marina (Redwood City)
- San Francisco Marina – East Harbor (San Francisco)
- San Francisco Marina – West Harbor (San Francisco)
- Treasure Isle Marina (San Francisco)
- Westpoint Harbor (Redwood City)

The City of San Francisco has redeveloped the West Harbor of its marina over a 2-year period from 2011 to 2013 and plans to redevelop the East Harbor over a similar period from 2017 through 2019.

The basin of Westpoint Harbor in Redwood City was completed in approximately 2007, and the marina opened in stages beginning in 2008. The first phase of docks was completed in mid-2009. A second phase of docks began construction in late 2010 and was completed in late 2014. A boat launch ramp and dry storage yard also were added as part of this second phase. The third and final phase of docks, consisting of a fuel dock and a transient dock, were added in 2015. The opening and expansion of Westpoint Harbor captured market share from other marinas in the market area, including the Marina, while also absorbing slips lost from the closure of Pete's Harbor in Redwood City.

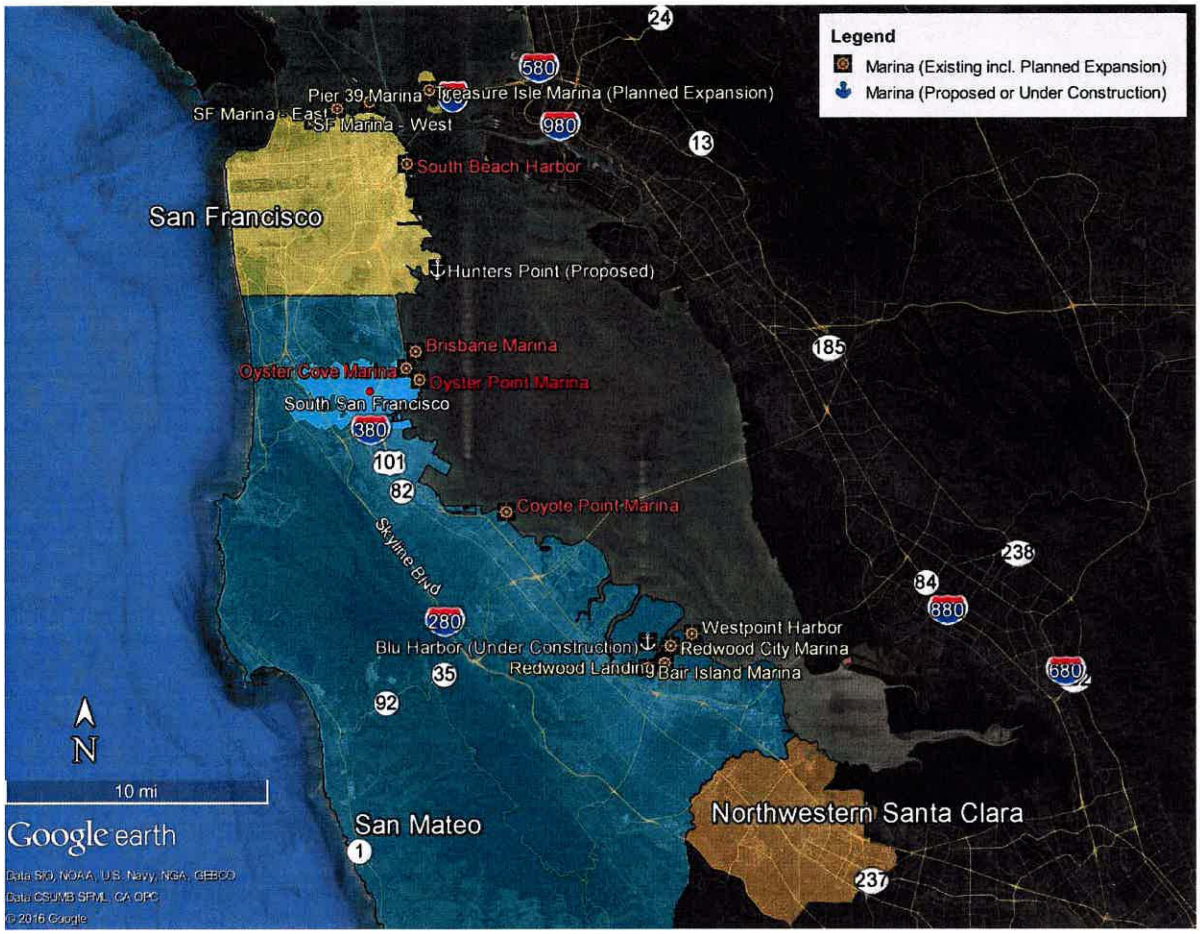

Figure 2
Competing Marinas

2.3.1 Slip Mix at Competitor Marinas

Our subconsultant, Almar Marinas, conducts an annual survey of marinas in the San Francisco Bay Area. This survey covers the current marina slip mix, fees by slip size and berth type (i.e., single finger or double finger), overall marina occupancy rates, standard and optional amenities, and live-aboard policy. The survey is conducted at the end of the calendar year. Therefore, the information provided is for the 2015 calendar year. Many public and some private marinas operate on a fiscal year which begins on July 1 of a calendar year. Some of the information provided may have changed since the survey was last updated.

As shown in Table 5, the newest marina in the list of primary competitors, Westpoint Harbor, has approximately 58% of its slips in the 40- to 50-foot range. A further 24% are 55- or 60-foot slips. The West Harbor at San Francisco Marina, which was recently redeveloped, also has approximately 57% of its slips in the 40- to 50-foot range. This is especially revealing when compared to its sister marina in the East Harbor, which has not yet been renovated. All the slips at East Harbor at San Francisco Marina are 40-foot and less. Other older marinas deemed as primary competitors such as Brisbane, Oyster Cove, and Coyote Point also have a majority of slips in the under 40-foot class. Even South Beach Harbor, which was constructed in the late 1990s, has over 80% of its slips in the 30- to 40-foot range. Slip mixes are similar at the secondary competitor marinas, with the majority of slips in the 40-foot and less range.

Table 5
Slip Mix at Oyster Point Marina and Competitor Marinas

Marina	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	80'	Side Ties	End Ties
Oyster Point Marina	28	165	100	16	66	18	1	34	NA	NA	NA	NA	NA
Top Four Competitors													
Brisbane Marina	NA	207	153	57	59	47	24	5	13	NA	NA	24	8
Coyote Point	58	264	35	95	12	NA	NA	10	NA	NA	NA	NA	NA
Oyster Cove	NA	104	32	40	3	33	NA	10	NA	NA	NA	4	9
South Beach Harbor	20	200	198	181	42	35	NA	NA	NA	NA	NA	30	7
Other Marinas Located in San Mateo and San Francisco Counties													
Bair Island Marina	1	26	33	25	10	NA	NA	NA	NA	NA	NA	NA	NA
Pier 39 Marina	NA	NA	133	65	26	66	NA	7	NA	NA	NA	20	6
Port of Redwood City Marina	NA	77	55	11	1	NA	NA	NA	NA	NA	NA	33	6
Redwood Landing	10	15	5	NA	NA	NA	NA	NA	NA	NA	NA	6	3
San Francisco Marina – West	6	73	39	104	48	48	NA	20	NA	4	4	NA	5
San Francisco Marina – East	20	152	103	68	NA	NA	NA	NA	NA	NA	NA	NA	NA

Marina	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	80'	Side Ties	End Ties
Treasure Isle Marina	46	19	24	3	NA	NA	11	NA	NA	NA	NA	3	4
Westpoint Harbor	NA	NA	12	77	63	100	49	51	NA	2	4	52	6

Notes:
NA = not applicable
Source: Almar Marinas annual Bay Area marina survey

2.3.2 Occupancy and Wait Lists for Competitors

Occupancy rates for the Marina and its competitors are provided in Table 6. The Marina's top four competitors have occupancy rates ranging from 75% to 100%, with an average of 86.9%. The occupancy rate at all marinas in the City of San Francisco and on the Bay side of San Mateo County, excluding Oyster Point Marina, is approximately 84.7%. This occupancy rate is substantially higher than the occupancy rate of the Marina, and furthermore, it is weighed down by the relatively low occupancy rate of the new Westpoint Harbor, which accounts for 30% of vacancies in the Marina's target market area but only 11% of the area's slips. However, we expect the occupancy rate at Westpoint Harbor to further improve with time, thereby reducing available supply and increasing demand for slips at Oyster Point Marina.

The marinas in San Francisco can be considered to be fully rented, with a collective occupancy of just over 93% of the 1,840 slips currently within the city boundary. The City of San Francisco Marina and South Beach Harbor have sizeable wait lists of 310 and 796 boaters, respectively. The waitlist numbers are expected to increase during the upcoming redevelopment of the East Harbor of the City of San Francisco Marina. Once that project is completed, most temporary marina tenants (those who have been in their berths 10 years or less) will lose their slips due to a reduction in slip count, and current marina tenants may opt to berth in other marinas due to the higher rates charged in order to repay the construction loans. Waitlisted and displaced boaters at the City marinas present an opportunity for the Marina.

Oyster Cove Marina has a wait list for its 50- and 60-foot slips. As of August 2016, there are 20 prospective tenants on the list. Coyote Point Marina does not have an active wait list. Brisbane Marina does not currently have a wait list, and was recently dredged.

Overall, occupancy is higher at the top four competitor marinas due to additional amenities, improved maintenance (i.e., dredging and upkeep of docks), stricter enforcement of marina policies and removal of derelict vessels, and their good location. The extensive wait periods at the City marinas is an opportunity for the Marina.

Table 6
Occupancy at Oyster Point Marina and Competitor Marina

Marina	Total Slips	Occupancy	Vacant Slips
Oyster Point Marina	**428**	**67%**	**142**
Top Four Competitors			
Brisbane Marina	597	82%	108
Coyote Point Marina	474	75%	119
Oyster Cove Marina	235	84%	38
South Beach Harbor	713	100%	0
Top Four Competitors	**2,019**	**86.9%**	**265**
Top Four Competitors plus Oyster Point Marina	**2,447**	**83.4%**	**407**
Other Marinas Located in San Mateo and San Francisco Counties			
Bair Island Marina	95	100%	0
Pier 39 Marina	323	93.5%	21
Port of Redwood City Marina	183	93%	13
Redwood Landing	39	65%	14
San Francisco Marina – West	351	90%	36
San Francisco Marina – East	343	83%	59
Treasure Isle Marina	110	90%	11
Westpoint Harbor	416	59%	171
Total San Mateo and San Francisco County Marinas (excluding Oyster Point)	**3,879**	**84.7%**	**590**
Total San Mateo and San Francisco County Marinas (including Oyster Point)	**4,307**	**83%**	**732**

Source: Almar Marinas annual Bay Area marina survey

2.3.3 Slip Rates at Competitors

There are numerous marinas within the region. Each marina has various advantages and disadvantages, as well as differing rate structures. Most marinas have similar amenities, although there are some differentiators, ranging from easy to add amenities such as Wi-Fi service and laundry rooms, to difficult or expensive to add amenities, such as a boat yard and upgraded electrical service. Features common to marinas that charge higher than average rates are location, age of the docks, and general upkeep/appearance. Location can include proximity to destination areas (San Francisco or downtown Oakland), freeway access, open water access, and proximity to grocery stores and restaurants. Most of the marinas in the market area that charge higher rates have been renovated or constructed within the past 15 years. However, several older marinas, which have maintained their docks and adjoining landside facilities, have also demonstrated the ability to charge higher rates while maintaining occupancy.

Average rates for the marinas in the target market area, as provided in Almar Marinas' annual survey, are shown in Table 7. Average rates are provided in the following groupings:

- Top four marina competitors – combined average including Oyster Point Marina
- Top four marina competitors – combined average excluding Oyster Point Marina
- San Mateo and San Francisco County marina competitors – combined average including Oyster Point Marina
- San Mateo and San Francisco County marina competitors – combined average excluding Oyster Point Marina

Several marinas with publicly available rate schedules are planning for rate increases of 3% to 10% for the upcoming fiscal year. It is also of note that the City of San Francisco Marina has a cost recovery structure that increases slip fees upon completion of dock rebuilds and escalates rental rates annually to recoup the redevelopment costs within a defined period. This can be done due to the high demand for slips in their marina. However, these rate increases also provide an opportunity for other local marinas to attract boaters to a comparable facility at a lower price.

Table 7

Monthly Slip Rates per Lineal Foot by Slip Type and Length

Slip Size/Type	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	80'
Oyster Point Marina											
Single Finger	NA	$7.70	$7.96	$8.01	$7.93	$7.98	NA	$7.96	NA	NA	NA
Double Finger	$8.40	$8.05	$8.25	$8.27	$8.28	$8.30	$8.30	$8.31	NA	NA	NA
Top 4 Marina Competitors – Combined Average including Oyster Point Marina											
Single Finger	NA	$7.16	$7.39	$7.32	$7.35	$7.30	$6.50	$7.29	$6.72	NA	NA
Double Finger	$8.85	$8.30	$8.78	$9.49	$9.72	$9.86	$8.30	$8.58	NA	NA	NA
Top 4 Marina Competitors – Combined Average excluding Oyster Point Marina											
Single Finger	NA	$6.62	$6.81	$6.62	$6.77	$6.62	$6.50	$6.62	$6.72	NA	NA
Double Finger	$9.08	$8.37	$8.91	$9.90	$10.08	$10.37	NA	$8.71	NA	NA	NA
San Mateo and San Francisco County Marina Competitors – Combined Average including Oyster Point Marina											
Single Finger	$9.19	$8.51	$8.61	$9.66	$9.91	$9.99	$9.62	$9.98	$6.72	$14.85	$15.85
Double Finger	$9.35	$8.95	$9.47	$10.16	$10.29	$10.93	$9.41	$10.68	NA	$14.85	$15.85
San Mateo and San Francisco County Marina Competitors – Combined Average excluding Oyster Point Marina											
Single Finger	$9.19	$8.72	$8.72	$10.21	$10.90	$11.00	$9.62	$11.00	$6.72	$14.85	$15.85
Double Finger	$9.51	$9.05	$9.59	$10.35	$10.51	$11.37	$10.51	$11.16	NA	$14.85	$15.85

Notes:

NA = not applicable

1. Rates are monthly rates per lineal foot of slip length. For total monthly rate, multiply rate by slip length.
2. Single Finger also may be called double-loaded slip/berth or double-wide. Each vessel has 1 finger.
3. Double Finger also may be called single-loaded slip/berth. Each vessel has 2 fingers.

Source: Almar Marinas annual Bay Area marina survey

Legend:

Rate is lower than Oyster Point Marina for same slip length

Rate is higher than Oyster Point Marina for same slip length

2.3.4 Amenities

The competing marinas listed differ in the types of amenities available. All facilities provide power and water to their tenants. Some of the facilities have a fuel and/or pump out dock like the Marina, while others do not. Some marinas have been recently renovated, or dredged, while others have not. Lastly, some marinas have dry boat storage and/or a launch ramp.

Westpoint Harbor has an in-slip pump-out service. One pump-out hydrant serves 4 slips. As noted previously, Westpoint Harbor was recently constructed and includes state-of-the-art facilities and amenities. As noted above, the City of San Francisco has redeveloped the West Harbor marina and plans to redevelop East Harbor in the coming few years. Brisbane Marina has older facilities and simple amenities, but it has been recently dredged and the slips are in relatively better condition than the Marina. Although a few of the marinas in the East Bay have on-site or adjacent boatyards, the Marina has the only such facility (Drake Marine) on the Peninsula (including San Francisco). However, this amenity is proposed to be removed as part of the redevelopment of Oyster Point.

All marinas in San Francisco, as well as several others in San Mateo County, do not allow live-aboards, unlike Oyster Point Marina, which has approximately 45 live-aboards. BCDC limits the number of live-aboards to 10% of a marina's total number of slips. As previously noted, live-aboards have advantages such as higher slip fees and disadvantages such as higher likelihood for derelict vessels and clutter.

The marinas in San Francisco are adjacent to various tourist and entertainment activities, such as Pier 39, North Beach, AT&T Park, and the Marina Green. There are also residential, commercial, and shopping areas near these marinas. The Brisbane, Oyster Cove, and Coyote Point marinas are most similar to the Marina in terms of marina amenities and surrounding attractions.

2.3.5 Known Upcoming or Recent Marina Projects

There are additional proposed new and upcoming projects that may increase slip numbers in the region, if permitted and constructed. Many of these developments include a residential

component. On average, 5% to 10% of residents in a new waterfront residential development with a marina component will rent slips. This penetration rate is lower for projects in urban areas with alternative entertainment options and will likely be even lower in the Bay Area due to the lack of housing options, especially with regards to proximity to job centers. Therefore, we will assume only 2% to 3% of new residents in a waterfront development will also become tenants of the development's marina.

Treasure Isle Marina is planning a major expansion, which will nearly quadruple its number of slips from 110 to over 400. In addition, the planned redevelopment of Treasure Island, including new residential development, would create local demand at the site.

A 300-slip marina is proposed as part of the San Francisco Shipyard development at Hunters Point (San Francisco Shipyard website 2016). This development will add not only new slips to the San Francisco market but also over 11,000 residences, office space, retail, entertainment, and recreational amenities. It is anticipated that the development would consume all of these available slips. Furthermore, at this time this marina project is neither in the planning stage nor on any development timeline.

A 221-slip marina is also proposed as part of the Brooklyn Basin (Brooklyn Basin website 2016) development on the Oakland waterfront. Brooklyn Basin will have 3,000 new residential units, retail, office space, and recreational space. For the Brooklyn Basin development, 60 to 90 slips of the 221 planned slips could be consumed by new residents of the development. The remaining slips will likely be absorbed by boaters on waiting lists at nearby marinas in Oakland and Alameda, as well as those with vessels in Emeryville, Berkeley, Richmond, and other points north, who want to be in Oakland or Alameda. This marina is also not considered a competitor owing to its location.

A 65-slip marina (Blu Harbor 2016) is under construction as part of the 402-unit Blu Harbor (Pete's Harbor redevelopment) project in Redwood City. Given recent aerials of the marina construction and the backup distance standard provided by DBW, it is our estimation that slips in this basin could accommodate vessels up to 42 feet in length. Longer vessels could be accommodated on side ties if those are incorporated into the final layout. Given the more

secluded location of this residential development, it is estimated that 10 to 20 slips will be consumed by new residents.

Another prime marina basin that currently sits empty, except for a 30-slip small boat dock, is the basin within the One Marina residential development in Redwood City. A 500-slip marina (the former Peninsula Marina) was once located in this basin, and based on the water space area and configuration, a 250- to 300-slip marina with a modern slip mix could be constructed. However, there is no evidence that any marina is planned or has been submitted yet to permitting agencies. Furthermore, it is our understanding that Redwood Creek suffers from frequent siltation issues, and the Blu Harbor, Bair Island, and One Marina basins are upstream of the Port of Redwood City's maintenance dredging jurisdiction. Therefore, although it is a prime marina location, build-out may be limited at this basin.

Redwood City has also completed a study on its Inner Harbor. This area includes the Docktown Marina, which currently consists primarily of live-aboards and an empty lagoon. This lagoon is larger than the water space within the One Marina development. However, it is not clear whether alternatives for this water space include a marina or docks for house boats. This area is also upstream of the Port of Redwood City's maintenance dredging jurisdiction.

The following are other local marinas that have submitted or are evaluating plans for redevelopment:

- City of San Francisco Marina – East Harbor (scheduled redevelopment)
- Coyote Point Marina (evaluating redevelopment)
- Foster City Marina Center (evaluating development of a waterfront-oriented complex with 214 boat slips and a non-motorized craft launch area)

3 SLIP RENTAL RATE EVALUATION

Based on the information presented in Section 2, specifically the slip fees of Oyster Point Marina's primary and secondary competitors, a range of slip fees have been developed for single and double finger slips. These fees are presented in Table 8.

The low end of the range assumes the following:

- Dock maintenance and repairs recommended in the 2014 Marina Condition Survey are performed. This includes, but is not limited to, the following:
  - In-like-kind replacement of Docks 12, 13, and 14, decking and rub rail replacement on Docks 1–6, removing biofouling from existing dock floats to remain, and other general maintenance to the floating docks
  - Landside improvements to the parking lots and utility services (proposed to be corrected as part of the development agreement with Oyster Point Development, LLC)
  - Cosmetic repairs to Restrooms 4 and 5
  - Relocation of the Harbormaster Building
- Maintenance of existing slip mix
- Maintenance of existing dock amenities
- Maintenance to the breakwaters
- Improved customer service and security

The high end of the range makes the following assumptions:

- Complete replacement of Docks 1–6 and 12–14. This includes, but is not limited to, the following:
  - New concrete floating docks to match Docks 8 and 11
  - Slip mix to match current and projected market demand
  - Fairways and slip widths to comply with DBW guidelines
  - New guide piles, concrete gangway platforms, and gangways
  - Complete utility service including electrical, communication, and potable water to all slips
  - Wi-Fi service in the marina

  - Dock boxes at all slips

- Replacement of all utility services and compliance with current code
- Improvements to parking lots to address flooding and sea-level rise (proposed to be corrected as part of the development agreement with Oyster Point Development, LLC)
- Relocation of the Harbormaster Building
- Remodel or replacement of Restrooms 4 and 5
- Addition of restaurant and coffee shop
- Conveniently located kayak and SUP storage for marina tenants
- Top-end customer service

Table 8
Slip Fee Range

Slip Size	Single Finger		Double Finger	
	Low End	High End	Low End	High End
25'	NA	NA	$7.95	$8.83
30'	$7.36	$8.96	$8.00	$9.60
35'	$8.10	$9.86	$8.80	$10.56
40'	$8.75	$10.65	$9.51	$11.41
45'	$9.14	$11.12	$9.93	$11.92
50'	$9.48	$11.54	$10.30	$12.36
55'	$9.79	$11.91	$10.64	$12.76
60'	$10.07	$12.26	$10.95	$13.14
65'	NA	NA	NA	NA
70'	NA	NA	NA	NA
80'	NA	NA	NA	NA
Price per Square Foot of Slip Water Space	$0.23	$0.28	$0.25	$0.30

Notes:
NA = not applicable
1. Rates shown are per lineal foot unless noted otherwise.
2. Rates for side ties and end ties over 60 feet in length are based on 60-foot double finger rates.

4 SUMMARY OF MARKET ASSESSMENT

The Marina is an aging facility with many of the docks at or nearing the end of their useful life, and problems with upland infrastructure, according to the 2014 Marina Condition Survey. The Marina lacks amenities for boaters, and is relatively isolated from services. Although the Marina is missing some standard amenities such as potable water service and dock boxes at each slip, the Marina does allow live-aboards, which is not typical for many marinas in the City of San Francisco or in San Mateo County.

The Marina has a prime location within the Bay, which has supported the current occupancy and provides a strong foundation for future development. The extensive wait lists at City of San Francisco marinas and demand for 50- and 60-foot slips at Oyster Cove Marina may be an opportunity, and while there are other proposed marina developments in the Bay, the larger developments are either outside of the market area, or are likely to supply some or most of their own demand, as explained above.

The City could choose to replace in-kind or repair what is currently available in terms of slip mix, which would likely improve occupancy somewhat based on better facilities, and could also allow for improved fees. With redevelopment to a modern slip mix, coupled with landside improvements, the City can achieve higher rates of return based on higher slip fees, and could reasonably expect occupancies at the current regional level (goal of 80%), given the prime location.

4.1 SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis for the Marina

4.1.1 Strengths

- Location on the Peninsula (within 30 minutes of all points in San Francisco and north Silicon Valley)
- Quick access to open water
- Fuel dock
- Pump-out dock
- Used oil disposal

- Public boat launch with wash-down areas
- Guest dock
- Live-aboards permitted
- Free parking
- Heated bathrooms with showers
- Laundry facility
- 24-hour staffing
- Dry boat storage (Drake Marine)
- Marine store (Drake Marine)
- Public park with access to the San Francisco Bay Trail
- Ferry terminal
- Recently repaved and elevated parking lot at the east basin

4.1.2 Weaknesses

- Aging timber dock system (more than 30 years old) in very poor condition
- Listing fingers
- Unappealing landside improvements in unmaintained and distressed condition
- Crumbling and frequently flooded parking lot at the west basin (proposed to be corrected as part of the development agreement with Oyster Point Development, LLC)
- Dock boxes are extra cost
- No Wi-Fi service or other modern perks
- Older yacht club with diminishing membership
- Lack of nearby landside attractions (e.g., coffee shops, restaurants, or retail stores)
- Bait-and-tackle shop currently closed and not planned for reopening
- Poor advertising (e.g., Latitude 38 magazine) especially when compared to immediate competitors at Oyster Cove and Brisbane
- Large percentage of live-aboards

4.1.3 Opportunities

- Capturing boaters who want to be in or near the City of San Francisco but who are on waitlists at San Francisco marinas
- Capitalizing on population growth and rising incomes in San Mateo and Santa Clara counties
- Median age is increasing, as is the number of households in market area

4.1.4 Threats

- New or planned marinas competing for customers
- Existing tenants leaving due to deteriorating Marina conditions

Besides location, slip fees, and marina age, boaters tend to select a marina based on management. Good management tends to translate into well maintained and clean facilities, despite a facility's age. However, no amount of maintenance can prevent the need for a dock's replacement once it has outlived its useful life.

With improved management, improved outreach, rebuilt docks, all standard amenities, and improved landside infrastructure (reconstructed parking lots and clean restrooms), the Marina is in a prime location to capture market share and capitalize on the population growth in its market area. Facilities such as a fuel dock, pump-out dock, dry boat storage and maintenance yard, boat launch, and windsurfing launch ramp further add to the Marina's appeal.

5 REFERENCES

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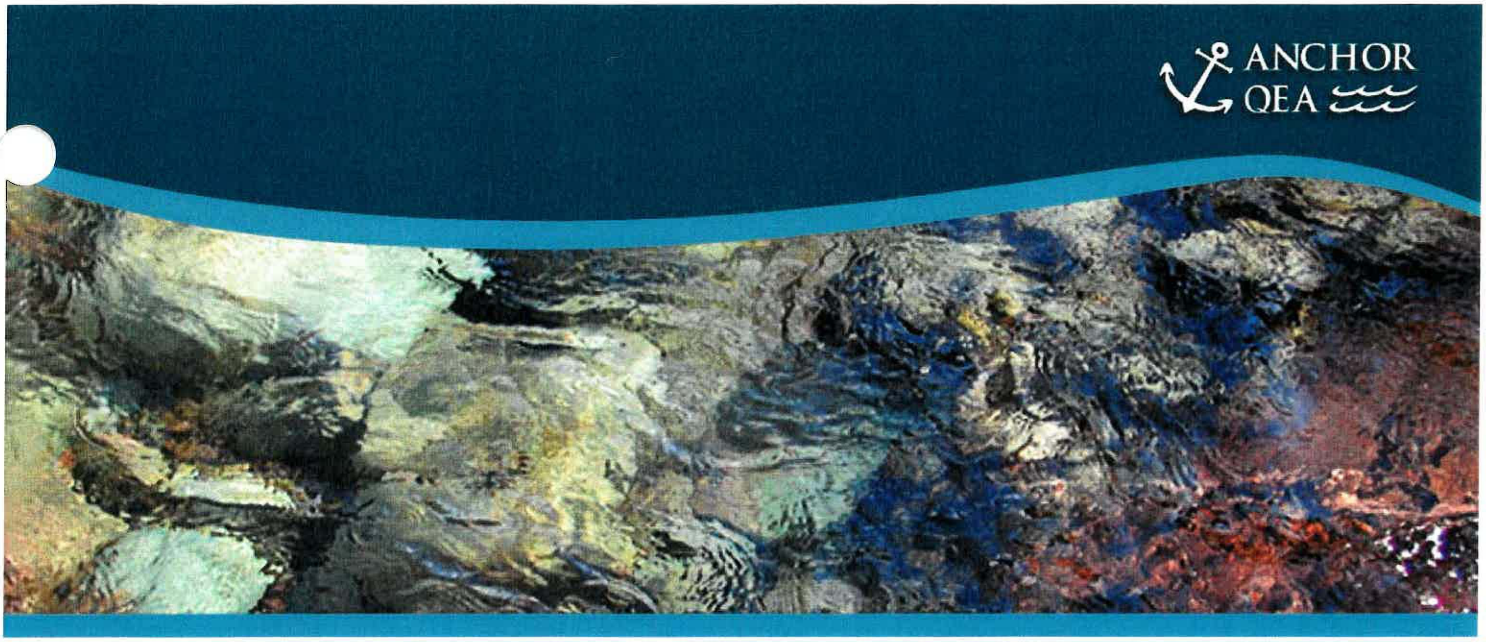

TASKS 2 AND 3 SUMMARY REPORT
OYSTER POINT MARINA STUDY

Prepared for

City of South San Francisco

400 Grand Avenue

South San Francisco, California 94080

Prepared by

Anchor QEA, LLC

130 Battery Street, Suite 400

San Francisco, California 94111

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LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
CIP	Capital Improvement Plan
City	City of South San Francisco
DBW	California State Parks Division of Boating and Waterways
DMMO	Dredged Material Management Office
JPA	joint powers agreement
Marina	Oyster Point Marina
MLLW	mean lower low water
OH&P	overhead and profit
ROM	rough-order-of-magnitude
SF-11	Alcatraz dredged material placement site
SF-DODS	San Francisco Deep Ocean Disposal Site
SMCHD	San Mateo County Harbor District
Title 24	California Building Standards Code, Title 24, California Code of Regulation, current edition
USACE	U.S. Army Corps of Engineers, San Francisco District
UV	ultraviolet
WETA	Water Emergency Transportation Agency

1 PROJECT BACKGROUND

The City of South San Francisco (City) tasked Anchor QEA, LLC, with evaluating the market drivers and a proposed range of slip fees related to the potential repair and rehabilitation and/or full-scale renovation of the Oyster Point Marina (Marina). The Marina was originally constructed in the 1960s, offshore from the now closed Oyster Point Landfill, and was renovated and expanded in the 1980s and in 2012. The City is considering whether to terminate the joint powers agreement (JPA) with the San Mateo County Harbor District (SMCHD) prior to the contracted expiration of the JPA in 2026. This would result in the City assuming ownership and operation of the Marina. Therefore, the City needs to understand the market demand, potential future capital reinvestment costs, and revenue streams prior to taking any action on the JPA.

As part of the overall study, we reviewed information provided in the *Oyster Point Marina & Park Marina Facility Condition Survey* (2014 Marina Condition Survey; Moffat & Nichol 2014) prepared by Moffatt & Nichol for the SMCHD in 2014, conducted site visits, reviewed survey and development information provided by the City, and collected market information from our subconsultant, Almar Marinas. We used this information to develop a proposed range of slip fees for two scenarios, and then used this information, along with proposed marina slip mix options, to estimate design and construction costs and projected revenue.

1.1 Study Intent

The overall study consists of the following three components: a market feasibility assessment (Task 1); an existing marina and site condition assessment (Task 2); and marina layout modeling and associated cost estimates (Task 3).

Task 1 evaluated the market drivers for the Marina and developed two scenarios for a range of market-based slip lease rates (slip fees) for the Marina. The high end of the range of slip fees is based on replacing the Marina with a brand-new, state-of-the-art facility in terms of both amenities and operations, assumed to be part of a larger updated uplands development. The low end of the range is based on in-like-kind replacement of docks. The market evaluation and slip fee basis was presented in a separate report titled Marina Market

Evaluation and Updated Conditions Assessment for the Oyster Point Marina (published September 2016; Anchor QEA 2016).

Task 2 reviews the 2014 Marina Condition Survey and verifies and augments its assessment and recommendations based on a site visit. The site visit involved taking lead line measurements to assess the water depth throughout the Marina; reviewing the existing vessel conditions, which helped to determine the potential loss of tenants during a marina development and the resulting increase in slip fees; reviewing the existing Marina condition; and assessing additional Marina needs and site issues not already identified in the 2014 Marina Condition Survey. Task 2 does not include upland areas or vertical structures, and is focused on the Marina. Task 3 involves modeling Marina layouts under both slip fee scenarios to estimate design and construction costs and revenue projections. Tasks 2 and 3 are presented herein.

2 MARINA BACKGROUND

Due to the mole projecting into the Bay and the Water Emergency Transportation Authority (WETA) ferry terminal, the Marina essentially operates as two separate marinas: a west basin and an east basin. The west basin contains Docks 1 through 6 as well as the privately owned and operated Dock 7. Dock 7, which houses the fuel and pump-out docks in addition to several double-wide slips, sits in leased water space and was not considered in the redevelopment layouts. There is uncertainty whether the leasehold for the Dock 7 water space reverts to SMCHD or is transferred to Oyster Point Development, LLC, as part of the proposed development at Oyster Point. The east basin contains Dock 8 (the guest dock) and Docks 11 through 14, as well as the ferry terminal and two-lane public boat launch. According to the 2014 Marina Condition Survey, the west basin docks were installed in 1988, while Docks 12, 13, and 14 were installed in 1983. The breakwater structures were installed in 1980, with modifications performed in 2008.

2.1 West Basin

The west basin is primarily a small boat basin consisting of six dock strings with primary slips ranging from 26 to 45 feet in length, with a few shorter slips where dock electrical substations are located. There also is a 324-foot-long side-tie on the westernmost dock string as well as 34-foot, 66-foot (on 3 dock strings), 78-foot, and 89-foot-long end-ties. The existing dock mainwalks are 6 feet wide for Docks 2, 3, 4, and 5 and 8 feet wide for Docks 1 and 6. The fairways are generally oversized compared to current Division of Boating and Waterways (DBW) guidelines, with widths ranging from 2.0 to 2.35 times the adjacent slip lengths. DBW requires 1.75 times the longest slip length, so for example, for a 30-foot-long slip, a 52.5-foot-wide fairway is required. However, the Marina has 70-foot-wide fairways for 30-foot-long slips.

There are three total gangway platforms, each of which serves a pair of dock strings. These paired dock strings (Docks 1 and 2, Docks 3 and 4, and Docks 5 and 6) are connected by a 9-foot-wide headwalk. None of the three gangways in the west basin are Americans with Disabilities Act (ADA)-compliant.

2.2 East Basin

The east basin is primarily a large boat basin consisting of a 157-foot-long guest dock (Dock 8) and four dock strings with primary slips ranging from 36 to 60 feet in length, with two 30-foot slips at the public boat launch and 60- and 65-foot slips at the wave attenuating docks. Dock 11 also has a 337-foot-long side-tie dock. The existing dock mainwalks for Docks 12, 13, and 14 are 7 feet wide, while Dock 11 is 10 feet wide due to its side-tie dock. Each dock string in the east basin has its own gangway platform and gangway, but only the guest dock (Dock 8) and Dock 11, which were placed into service in 2013, have 80-foot-long, ADA-compliant gangways.

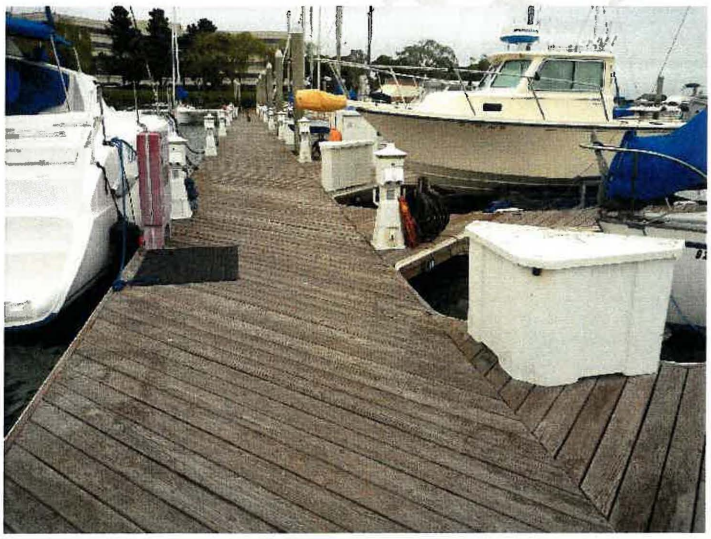
The wave attenuating docks were installed in 2012 to mitigate the unforeseen increased wave action resulting from the breakwater modification performed in 2008. These docks were designed after extensive hydrodynamic modeling by Moffatt & Nichol. Given their age and the resulting calm waters sheltered by these wave-attenuating docks, it is recommended that these docks be maintained in their current configuration. This recommendation will be a consideration in the proposed layouts for Docks 12, 13, and 14. Furthermore, no berthing is permitted at the ends of the wave attenuating docks for two reasons: 1) vessels at the end of these docks would be subjected to high wave action, resulting in vessel damage; and 2) end-tie vessels would narrow the channel width, affecting WETA ferry operations.

3 TASK 2: UPDATED CONDITIONS ASSESSMENT

The 2014 Marina Condition Survey reviewed the condition of Docks 1 through 6, 8, and 11 through 14; the marina gates, gangways, and gangway platforms; the public fishing pier; the public boat launch; the breakwaters; all restrooms; all utility and maintenance buildings; the harbormaster building; roadways; and parking lots. On August 22, 2016, Anchor QEA personnel walked the listed docks (Photographs 1, 2, and 3) and observed the gangways, platforms, breakwaters, public boat launch, and publicly accessible portions of the Marina site. No observations were performed on the buildings or fishing pier. We generally agree with the findings of the condition survey with some caveats.

3.1 Docks

The 2014 Marina Condition Survey listed Docks 1, 3, and 4 in fair condition, Docks 2, 5, and 6 in good condition, and Docks 12, 13, and 14 in worn to fair condition. It is our opinion that, using the 2014 Marina Condition Survey's condition rating system, Docks 1 through 6 are in fair condition (Photograph 1), and Docks 12, 13, and 14 (Photograph 3) are in worn condition.



Photograph 1
General appearance of Docks 1 through 6

Photograph 2
General appearance of Dock 11

Photograph 3
General appearance of Docks 12, 13, and 14

3.1.1 Guide Piles

The guide piles are all in good to like new condition, which matches the findings of the 2014 Marina Condition Survey.

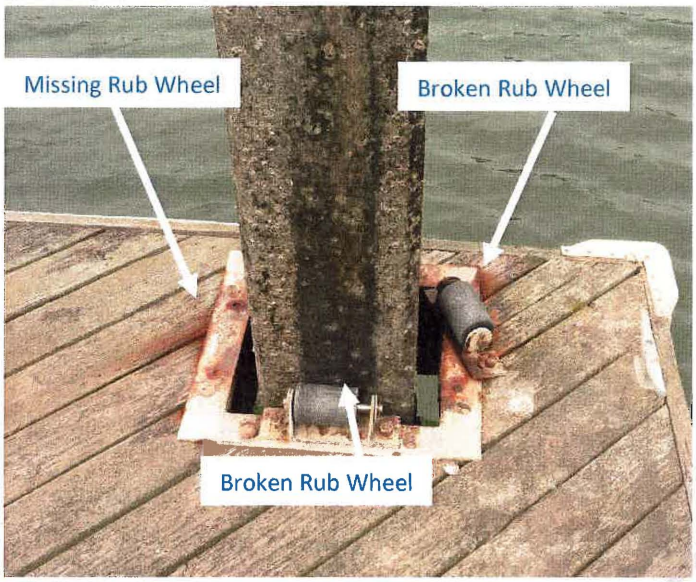
3.1.2 Dock Appurtenances

Unlike the generally high ratings for the guide piles, our findings found a significant number of deteriorated pile guides, including completely worn rollers, corroded guides, missing lag bolts, and bent frames. Therefore, we disagree with the 2014 Marina Condition Survey's pile guide ratings. However, we do agree that repair to walers and replacement of portions of rub rails are required.

3.1.2.1 Pile Guides

The pile guides throughout the Marina are in fair to poor condition. A pile guide in fair condition is shown in Photograph 4. However, several guides are failing with completely worn rub wheels, excessive corrosion, broken bolts, or broken or missing wheels (Photograph 5). This is especially pronounced on Docks 1 through 6. For docks to remain in good working condition, a comprehensive repair and replacement plan is required.

Photograph 4
Pile guide in fair condition, requiring repairs to the galvanic coating



Photograph 5
Pile guide in poor condition

3.1.2.2 Rub Rails

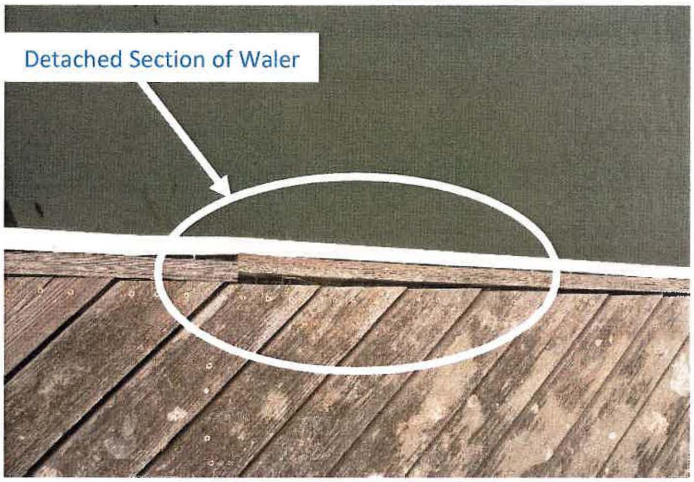
For Docks 12, 13, and 14 in the east basin, the rub rail is not continuous. It runs along the finger, wrapping around the finger end corners, and runs along the head of the slip. There is no rub rail along the triangular fillets. The rub rail on the east basin docks wraps around the edge of the coverboard so that it is nailed vertically and horizontally into the dock. Separation of the rub rail typically was only found at the finger end corners due to damage from vessel impact. Normally, corner bumpers or dock wheels are installed at the finger ends to help absorb vessel impacts and minimize damage to the docks. Docks 8 and 11, which were installed in 2013, are representative of current rub rail and corner bumper installations.

In the west basin, the rub rail runs continuously along the cover boards of each slip, end-tie, and side-tie. This rub rail is only nailed horizontally into the cover boards and was found to have separated from the timber walers at bends in the dock, resulting in exposed nails (Photograph 6). This separation is likely due to expansion of timber members from moisture as well as shrinkage of the rub rail rubber from ultraviolet (UV) exposure. In a few locations, sections of rub rail have separated completely from the timber waler (Photograph 7). In all

instances, the rub rail needs to be nailed into the cover board. If this cannot be done, then these interior bend sections need to be cut and removed to eliminate the exposed nails and reduce the pull-out stress on adjacent nails along the rub rail. In addition, some sections of waler were found to be detached (Photograph 8), which also causes damage to the rub rail.

Photograph 6
Detached rub rail with exposed nails

Photograph 7
Detached rub rail



Photograph 8
Detached waler

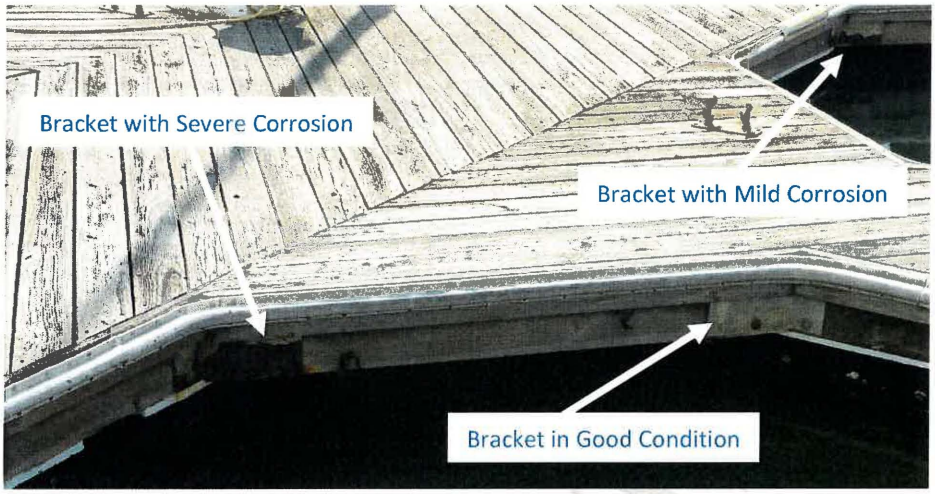
3.1.2.3 Cleats

Several cleats were found to be loose or severely corroded (Photograph 9) on the docks constructed in the 1980s. The bolts need to be tightened or replaced.

Photograph 9
Cleat in poor condition

3.1.2.4 Finger Knee Brackets

Several finger knee brackets were found to have extensive corrosion (Photograph 10). These were not discussed in the 2014 Marina Condition Survey. It is recommended that these brackets be commercially cleaned and coated with a marine-grade epoxy.



Photograph 10
Finger knee brackets: right in good condition, left severely corroded

3.1.3 Decking

No moss or mildew are noted on the timberwork of the west basin docks. However, on a separate visit in March 2016, moss was found on these docks. Therefore, either SMCHD personnel removed the moss as recommended in the 2014 Marina Condition Survey findings, or the moss died due to the drier summer weather and increased foot traffic on the docks. Vegetation is growing in the decking cracks on Docks 12, 13, and 14 (Photograph 11).

Photograph 11
Vegetation growing between deck boards on Docks 12, 13, and 14

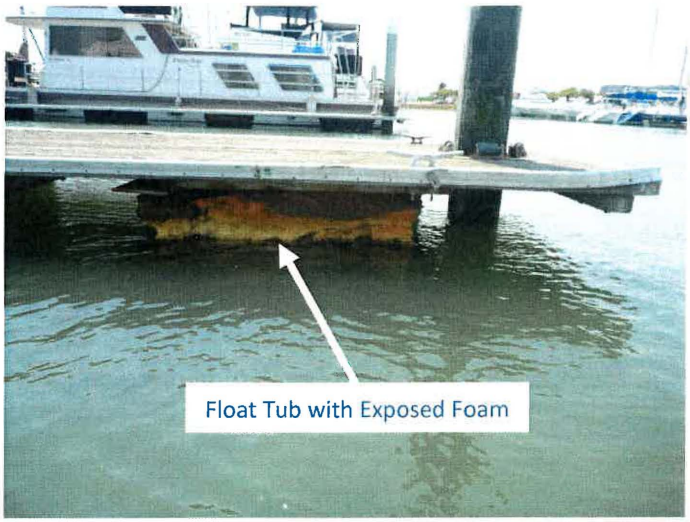
3.1.4 Floatation

Several fingers throughout the Marina ride high at the ends (uplifting) or are twisted (Photograph 12). The 2014 Marina Condition Survey stated that this was due to warping of the timber members from moisture and the resulting permanent set. Other factors, such as degradation of the float tubs and vessel and wind loads, can also cause twisting. The prevalence and severity of twisting indicates that there is no torsion bar in the docks. Torsion bars are installed to resist twisting. The finger twist typically is not as severe at fingers with guide piles at the end, because the piles resist some of the torque.

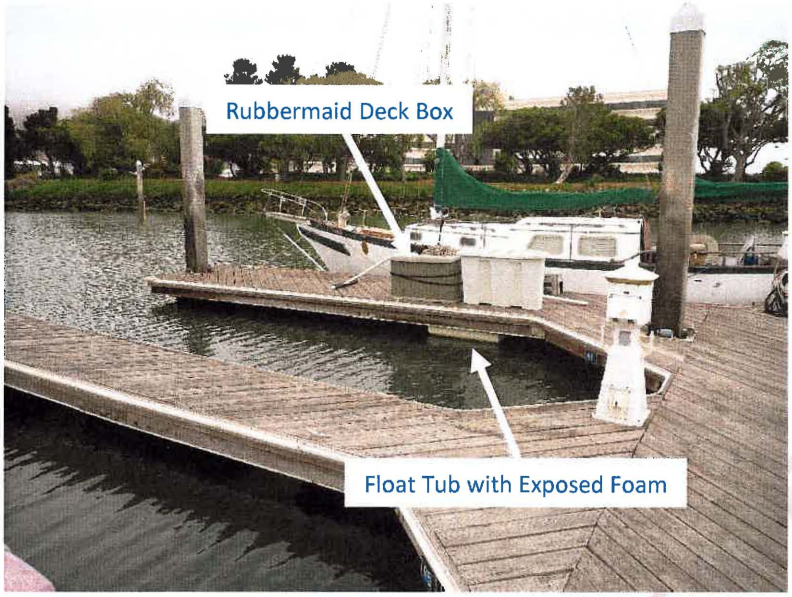
Photograph 12
Twisted and uplifted fingers (note the low freeboard on the mainwalk)

In addition to induced twisting, long-term loading of the mainwalks and degradation of the polyethylene-encased, polystyrene foam float tubs from UV exposure, marine growth, and water absorption has affected the levelness of the dock flotation. All float tubs are laden with excess marine growth, which should be removed as soon as possible. Given the number of floats and age of the Marina docks, it is recommended that any fauna removal program be restricted to Docks 1 through 6, because Docks 12, 13, and 14 would benefit from replacement rather than repair.

Some of the float tubs have lost their protective polyethylene cover (Photographs 13 and 14). With this cover gone, UV light and solvents in the water such as gasoline can attack the polystyrene foam. More concerning is unseen degradation wherein holes in the polyethylene cover allow water to enter the foam and solvents to dissolve the foam. This hidden degradation can cause finger twisting.



Photograph 13
Degraded float tubs with exposed foam



Photograph 14
Degraded float tub with exposed foam and tenant-installed Rubbermaid deck box.

The uplifting visible on several fingers is also notable. Typically, finger ends tend to dip into the water with age and degradation of float tubs. Uplift indicates that the mainwalk freeboard has degraded from its original state. Mainwalks handle much of the dead and live loads on a dock system, including transformers, power pedestals, and heavily-laden dock boxes. Over time, the mainwalk sinks under this load, causing finger ends to rise.

Much of the flotation and uplift issues at the Marina can be solved by replacing degraded float tubs or adding additional flotation to the mainwalk.

3.1.5 Note on Dock 7

Dock 7, which is not a part of this review, was not boarded for detailed observation. However, as we sailed by, it was observed to be in poor condition with rub rails falling into the water, broken pile guides, exposed foam in the floats, and missing pile caps. Dock 7, where the fuel pumps and wastewater pump out are located, is owned and operated by Drake Marine. Modifications to the lease agreement or changes to the operation of this facility may affect fuel and wastewater services for the Marina and adjacent facilities at Oyster Cove and Brisbane. The nearest fuel docks to the Marina are at Coyote Point, Gashouse Cove in the

San Francisco Marina East Basin, Westpoint Harbor in Redwood City, Ballena Isle Marina in Alameda, and at Jack London Square. There are other marine fueling facilities in Berkeley, Emeryville, and Sausalito. Although a marine fueling facility is not required at the Marina, it is desirable. As noted, the wastewater pumpout is also located at Dock 7. If this dock is removed or repurposed, it is recommended that the wastewater pumpout be relocated to Dock 8, the guest dock, or that a wastewater pumpout service be provided for the tenants.

3.2 Utilities

3.2.1 Electrical Cabinets

Docks 1 through 6 have electrical substations on each dock. These are fed from distribution panels at each of the three gangway platforms, which are fed from a centralized transformer and meter switchboard for the entire west basin. There is a separate transformer and meter switchboard feeding the east basin. The step-down transformers for Docks 11 through 14 are located on the gangway platforms. There appears to be a main power switchboard next to each transformer, with the marine power distribution board located on the docks at the base of each gangway. Although the electrical equipment at Docks 12, 13, and 14 is weathered, it did not display the level of corrosion seen on the switchgear at Docks 1 through 6, which displays extensive corrosion, particularly at the base. The 2014 Marina Condition Survey recommended that this equipment be repainted, while the SMCHD Capital Improvement Plan (CIP; Appendix A) calls for the replacement of the Docks 1 through 6 substations during the 2016-17 fiscal year.

3.2.2 Telecommunications

With the exception of Dock 11, telecommunication distribution nodes are housed in cylindrical units on the docks. These units are either black or green in color. One unit on Dock 2 was missing its cover at the time of inspection, but the wiring appeared to be free of corrosion and in good condition. It is assumed that the other covered nodes are also in good condition.

3.2.3 Fire Hose Cabinets

The exterior of the cabinets appear to be in good condition. The operational conditions of the standpipes, hoses, or extinguishers were not verified. However, the color of the fire hose cabinets is not consistent throughout the Marina: some are red and some are yellow. Additionally, Dock 11 only has 2.5-inch-diameter standpipes and fire extinguisher cabinets, which indicates a change in fire prevention requirements (i.e., application of provisions in the California Fire Code) by the jurisdictional authority.

3.2.4 Potable Water

Hose bibbs appear to be in good condition. Several were exercised, and water throw indicated good pressure.

3.3 Gangways, Gates, and Platforms

The west basin gangway platforms consist of timber structures supported by concrete piles and pile caps. The east basin gangway platforms consist of concrete platforms with timber railings and gate houses supported by concrete piles and pile caps. Except for the gangways at Docks 8 and 11, none of the gangways are ADA-compliant. As such, the only ADA-accessible dock is Dock 11. In addition, there is some mildew on the gangways serving Docks 1 through 6, which can become slippery when wet (Photograph 15). This mildew should be removed. Furthermore, the walking surfaces for the gangways at Docks 12, 13, and 14 need cleaning and possible replacement. Otherwise, the condition of all platforms, gangways, and gates match the assessments given in the 2014 Marina Condition Survey, which described required maintenance to address wear and tear such as loose timber railings and corrosion on the coated and galvanized metal surfaces (Photograph 16).

Photograph 15
Typical gangway condition with mildew

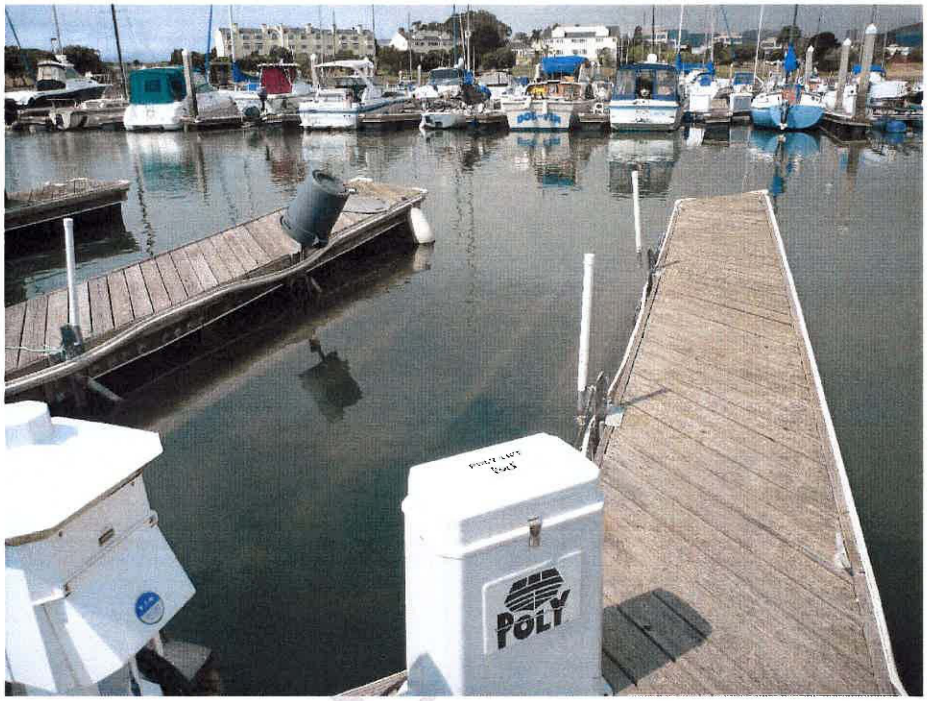
Photograph 16
Typical gate condition with minor corrosion.

3.4 Marina Operations

It appears that Marina tenants are given a wide amount of leniency when it comes to aesthetics of their vessels and use of the docks.

3.4.1 Dock Modifications

There are potted plants on the docks. Tenants, rather than the harbormaster, have installed HydroHoist boat lifts, which resulted in damage to rub rails (Photograph 17). Bicycles, in addition to a tenant-installed bike rack on Dock 11 (Photograph 18), are found throughout the Marina, in violation of SMCHD Ordinance Code Section 3.05.010. Three dinghies were seen atop finger ends, two of which can be seen in Photograph 19.

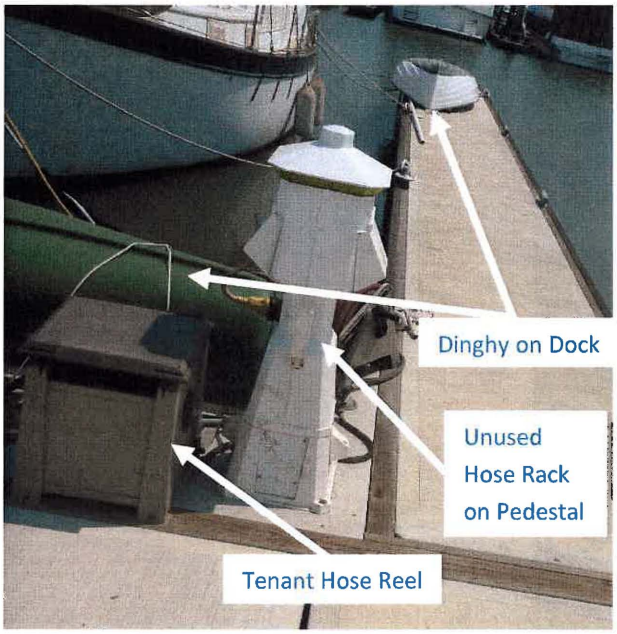


Photograph 17
Tenant-installed boat lift (note damage to rub rail)

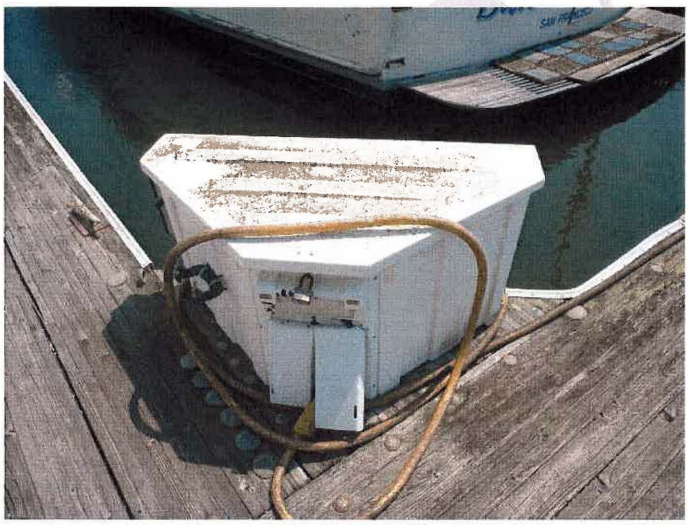
Because dock boxes are not a standard provision (dock boxes are an additional $10 per month), tenants have taken to installing their own dock boxes and hose reels. The latter is striking because most power pedestals have hose racks. The former is a greater issue, as it leads to an inconsistent array of dock boxes, including fiberglass boxes provided by the Marina and HyPower polyethylene boxes and Rubbermaid backyard deck boxes installed by tenants (Photographs 14 and 18). Additionally, the dock boxes installed by the Marina are not consistent, including fiberglass boxes from American Dock Box, Stockland Company, West Marine, and Innovation Industries. Even the new wave attenuating docks and Dock

11, which have dock boxes at each slip and hose racks on each power pedestal, are not immune to these operational issues. Finally, the dock boxes which are installed are not maintained or cleaned (Photographs 20 and 21).

Photograph 18
Bike rack, bicycles, and tenant installed dock boxes



Photograph 19
Dock 11: two dinghies stored on dock rather than in water or on vessel, and hose reel screwed into new dock



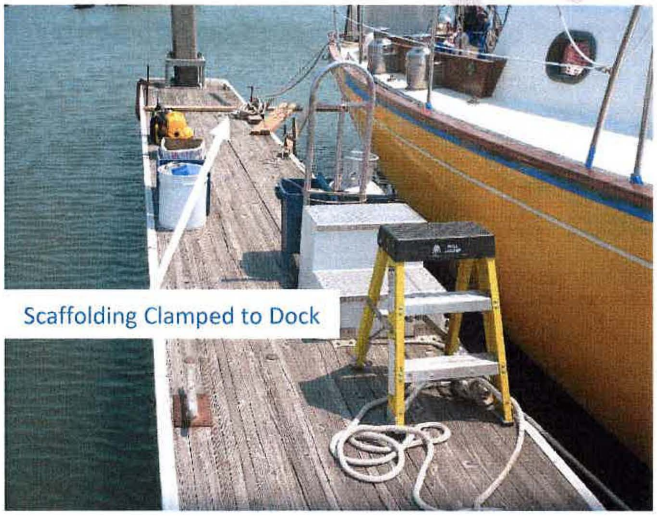
Photograph 20
Example of dirty and poorly maintained dock box

Photograph 21
Broken dock box on Dock 14

3.4.2 Vessel Maintenance

SMCHD Ordinance Code Section 3.05.120 defines the restrictions for repairing and maintaining vessels within the slips. All such work shall be confined to the vessel itself with no work "carried on in any manner whatsoever upon floats, gangways, or docks," and such work must not adversely affect other vessels or the environment. Spray painting and sandblasting are specifically forbidden. The types of repair work witnessed being performed within the Marina violates SMCHD code. A few tenants have taken to using the docks as a workspace to maintain their vessels. This on-dock work includes stripping and staining wood fixtures (Photograph 21), building a catwalk attached to a finger (Photograph 22), and using the dock as a staging platform for painting a vessel. Although a boat yard exists at the Marina, it appears that tenants prefer to perform vessel maintenance and repairs in slip.

Photograph 21
Varnishing doors on the dock



Photograph 22
Catwalk and on-dock vessel maintenance

3.4.3 General Condition of Vessels

Officially, 10% of total slips in the Marina are live-aboards. The ratio of live-aboards to total occupied slips, however, is significantly higher due to low overall occupancy rate of the Marina. A large number of these live-aboard vessels are poorly maintained (Photograph 23). Rentable landside storage units for live-aboards and other tenants, although not required, may aid in cleaning up the appearance of the Marina and its vessels while potentially providing an additional revenue stream.

Additionally, there are several other vessels which are in dilapidated condition and have questionable seaworthiness (Photograph 24). These vessels are spread throughout the Marina. One recently removed vessel caused damage to the new Dock 11 (for comparison, Photograph 25 shows an example of a well-maintained vessel in a wave attenuator dock slip). It is anticipated that many current tenants may leave the Marina if and when the Marina is renovated and slip fees increased. However, the length of wait lists, both in terms of time and quantity, at San Francisco marinas, specifically South Beach Harbor and the neighboring Oyster Cove Marina, indicates that the Marina can replace vessel losses while improving occupancy rates.

Photograph 23
Messy boat and dock with personal belongings stacked atop dock box

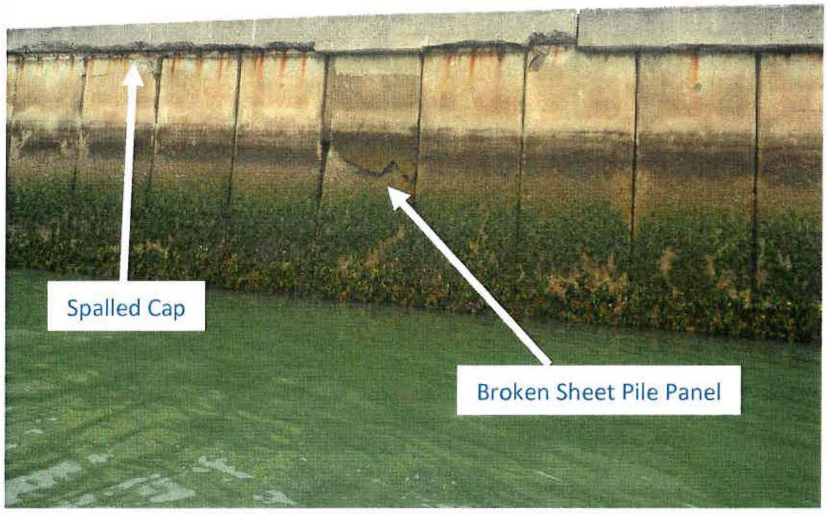
Photograph 24
Example of poorly maintained vessel

Photograph 25
Example of well-maintained vessel

3.5 Breakwater

We concur with the 2014 Marina Condition Survey findings and repair recommendations for the existing breakwater. Photographs 26 and 27 show two portions of the seawall: one in good condition and one requiring repair to the cap and possibly to a sheet pile panel, respectively.

Photograph 26
Section of breakwater in good condition



Photograph 27
Breakwater panel and cap requiring repair

3.6 Other Waterfront Structures

Although not a part of the site inspection, the public boat launch ramp and boarding float, the public fishing pier, and the non-motorized launch ramp all appear to be in very good condition, consistent with the findings of the 2014 Marina Condition Survey. However, the public boat launch ramp should be cleaned of algal growth (Photograph 28) to maintain surface traction and reduce the likelihood of wheel spin.

Photograph 28
Algal growth on public boat launch ramp

3.7 Landside

The condition of the landside areas, including roads, parking, and visible drainage issues, are consistent with the findings and repair recommendations presented in the 2014 Marina Condition Survey. Restrooms, the harbormaster building, the maintenance building and facility, other structures at the Marina, underground utilities, drainage (beyond visible ponding), sidewalks, and landscaping were not a part of this site inspection.

4 TASK 3: MARINA MODELS AND LAYOUTS

4.1 Modeling Process

The initial step in developing marina layouts is to calculate the existing marina dock area, slip mix, pile count, and water space acreage (basin area). The slip mix and basin area are input into a spreadsheet model to simulate the existing marina layout as a proof of concept. The cost estimate template in the spreadsheet model is then refined for the specific marina, incorporating information such as the aforementioned marina dock area and pile count, as well as gangway requirements.

The model slip mixes are based on the existing slip mix and adjusted for current marina occupancy levels and market conditions (e.g., if a third of 30-foot-long slips are currently vacant, the number of slips of that length in the model slip mixes is reduced substantially from current levels). The ideal slip mix fits a bell curve. However, this bell curve may be skewed to maintain a certain number of smaller slips while increasing the number of larger market-driven slips.

Once the model runs are calculated, the resulting slip counts are used to develop conceptual layouts. The conceptual layouts are optimized for the dimensions of the water space by incorporating project-specific constraints, which the site-neutral spreadsheet model does not incorporate. Project-specific constraints can include odd-shaped water space, connecting dock strings, water depth or dredging restrictions, dock orientation to accommodate prevailing winds, and minimum fairways widths for an in-marina boat launch or jib crane operation. However, the initial model runs are within a couple percent of the final conceptual layout slip counts and estimated costs of construction.

4.2 Typical Marina Design Assumptions

4.2.1 Dock, Fairway, and Channel Design

For marina design in California, the DBW *Layout & Design Guidelines for Marina Berthing Facilities*, published in 2005, is the current industry standard. Any marina seeking a design and/or construction loan from DBW must adhere to these guidelines. The DBW guidelines are the foundation of the spreadsheet model. However, now that the guidelines are over

10 years old, they are considered a minimum for new marina design. Vessel beams have become wider, providing more stability and more interior space, but also requiring wider berths than listed in the DBW guidelines. Additionally, powerboat slips are wider than sailboat slips. Most marinas opt to use powerboat slip widths. As such, the spreadsheet model uses powerboat slip widths in its calculations. However, a marina operator can choose the narrower sailboat slips, and similarly, when developing the conceptual design layouts, sailboat-only slips can be used to fill out the marina and maximize slip count.

The DBW guidelines also address fairway widths. A fairway is the water space between dock strings. This is different from channels, which are discussed in the following paragraph. For slips perpendicular to the fairways, the minimum fairway width is 1.75 times the longest slip along that fairway. (e.g., 30-foot-long slips require a 52.5-foot-wide fairway, while 35-foot-long slips require a 61.25-foot-wide fairway. Therefore, a fairway will be 61.25-feet-wide if the fairway has 30-foot slips on one side and 35-foot slips on the other side.) For side-tie docks, where vessels berth parallel to the fairway, the minimum fairway width is 1.5 times the longest vessel to be berthed at the side-tie dock. The vessel beam is not included in this value. Therefore, the water space width between the dock and obstruction (i.e., another dock, seawall, or shallow water) is the fairway width plus the beam of the largest vessel.

The channel is the water space beyond the pierhead line, which is the outward limit of a dock string. The bottom contour of a channel, per DBW guidelines, shall be a minimum of 75-feet-wide. The depth shall also be 3 feet below the deepest draft boat or 5 feet below the design low water depth (typically extreme low water for saltwater marinas), whichever is greater. The channel width needs to account for vessels berthed at the ends of dock strings which impinge on channel navigation. Therefore, channels are typically much wider than the minimum 75-foot requirement.

4.2.2 Accessibility

New marinas must comply with the current edition of the California Building Standards Code, Title 24, California Code of Regulation (Title 24) and the Americans with Disabilities Act Accessibility Guidelines (ADAAG). The following are the key requirements applicable to marinas:

- A minimum number of accessible slips shall be provided within the marina at a ratio relative to the total number of slips, as listed in Table 1.
- The distribution of accessible slip sizes provided shall mirror the marina slip mix.
- Slips may be deemed accessible as long as the path of travel is compliant and the adjoining finger(s) is(are) a minimum of 5-feet-wide.
- Gangways are exempt from the 1:12 maximum ramp slope requirement as long as the gangway is a minimum of 80 feet in length (the minimum gangway length is only 30 feet for marinas with fewer than 25 slips).
- Accessible parking stalls shall be provided as close as possible to the accessible dock.
- Accessible restrooms shall be provided as close as possible to the accessible dock.

Table 1

Accessible Boat Slip Requirements

Total Number of Boat Slips Provided in Facility	Minimum Number of Required Accessible Boat Slips
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12, plus 1 for every 100, or fraction thereof, over 1000

4.2.3 Basin Area and Draft Discussion

The basin area used for the spreadsheet model runs and the layouts is the area in which floating docks may be constructed. The minimum water space acreage is the basin area bounded by the existing bottom contour of -5 feet mean lower low water (MLLW) on the landside and the pierhead line on the waterside. The maximum water space acreage in the usable area is expanded by dredging, property acquisition, or extension of the pierhead line, where permitted.

A minimum depth of -5 feet MLLW is used because concrete docks will bottom out (i.e., draft of 0 feet) in shallower water depth under extreme low tides situations, which occur a few times a year. Bottoming out places a stress on the dock and will result in degradation and even failure of the dock over time. Timber docks are able to be located in shallower water with a minimum depth as shallow as -3 feet MLLW, but vessel drafts also need to be taken into consideration.

DBW provides guidelines for minimum design water depths for power and sailboats. Sailboats require more draft to accommodate their keels. As noted, DBW guidelines are a minimum, with desirable water depths being approximately 2 feet deeper to provide improved navigation and longer periods between maintenance dredging. Minimum and desirable water depths are provided in Table 2. In conformance with the previously noted channel water depth requirements, the desirable water depth for sailboats will be used for channel depths.

Table 2
Design Water Depth Requirements

	Powerboats		Sailboats	
Berth Length (feet)	DBW Minimum (feet)	Desirable (feet)	DBW Minimum (feet)	Desirable (feet)
Up to 40	6	8	6	8
Up to 55	8	10	8	10
Up to 65	8	10	10	12
Over 65	Vessel and Site Specific Dimensions			

Note: DBW = California State Parks Division of Boating and Waterways

4.3 Project-Specific Constraints and Assumptions

The following are the design and calculation constraints and assumptions used for the marina modeling.

4.3.1 General

- Replacement docks will be concrete to match the new docks installed as wave attenuating docks and at Docks 8 and 11.
- Boater preference is for single-loaded slips. Single-loaded slips are slips with a finger on either side of the vessel. This style of slip reduces available water space and potentially the total number of slips, but it prevents boats from hitting against each other during high wave, swell, or wind events. It also increases the fee that can be charged for a given slip.
- The replacement Marina will comply, at a minimum, with DBW design guidelines, Title 24, and ADAAG standards. However, per ADAAG, not all dock strings must be ADA-accessible as long as the minimum number of accessible slips representing the marina slip mix is provided.
- The southern boundary of the Marina will match the existing boundary. This will minimize the impact of dredging to the existing rock revetment and possible impacts to the landfill cap. Note that several locations along this boundary have depths shallower than -5 feet MLLW, as measured by a lead line survey. However, no location is shallower than -3.5 feet MLLW.

- The northern boundary of the Marina will match the existing boundary to maintain existing channel widths and avoid impacts to current operations or waterside structures such as the rock revetment on private property along the northern boundary of the Marina.

4.3.2 West Basin

- Westward expansion is constrained by mud flats and existing swimming area. There currently is a set of buoys defining the separation of motorized vessels and swimming area. Lead lines were performed along this line, and the depth was determined to be between -2.5 feet MLLW and -3 feet MLLW along most of the demarcation (shallower near shore). These depths are not sufficient for either docks or motorized vessels. Extensive dredging would be necessary.
- The breakwater ties into land between Docks 3 and 4. This land area is protected with a rock revetment. Due to existing revetment slopes, the main channel bends south. This results in Docks 1, 2, and 3 being shorter than Docks 4, 5, and 6, which front the breakwater. It is assumed that a seawall would be necessary to maintain the east-west alignment of the breakwater. Therefore, the existing limit of Docks 1, 2, and 3 is used in the model runs and conceptual layouts.
- Although the existing channel width of 111 feet between the breakwater and the docks is wider than the minimum 75 feet, this channel is reduced 15 to 20 feet by large vessels berthing at the end-ties and by boat owners wanting to maintain a safe distance from the breakwater. Therefore, the existing channel width is reasonable.
- Dock 7 and a private launch ramp exist to the east of Dock 6. Launch ramp access and minimum back-up space for the longest slip on Dock 7 are maintained in the conceptual layouts. However, the fate of Dock 7 is unknown, which may alter the west basin layout in future concept designs.
- Dock strings are paired to maintain the same number of gangways as currently exist.
- Side-ties at Dock 1 shall have a maximum vessel size of 40 feet. Including a vessel beam of 14 feet, the water space between the dock and the closest obstruction shall be a minimum of 74 feet.

4.3.3 East Basin

- The existing 140-foot-wide channel is sized to accommodate ferry operations. This channel width cannot be modified.
- Docks 8 and 11, constructed in 2013, will remain. The location of these docks define the ferry terminal water space.
- The wave attenuating docks at Docks 12, 13, and 14, constructed in 2012, will remain in their current orientation as long as the proposed layouts match up with the wave attenuating docks and the original wave attenuation model conclusions are preserved.
  - This assumption is reasonable if average slip size is between 47 and 55 feet in length. Such an average slip size maintains 3 docks (Docks 12, 13, and 14). A smaller slip mix would be required to add another dock string.
  - No vessels will be permitted to berth at the ends of the wave attenuating docks. The reasons for this constraint are the following: 1) the channel width shall be maintained for WETA operations; and 2) given the function of the wave attenuating docks, any vessel berthing at the end likely will sustain severe damage.
- The two-lane public boat launch ramp, reconstructed in 2008, will remain. DBW guidelines require a fairway clear area 50-feet-long and equal in width for the launch ramp, boarding float, and revetment. In addition, the navigation channel approaching the boat launch must be a minimum of 75-feet-wide. For the Oyster Point Boat Launch, the channel width is greater than the fairway clear area, so the channel width is used for the fairway clear width to avoid confusion. With the exception of reducing slip sizes near the boat launch clear area, the navigation channel width requirement is not considered a constraint.

4.4 Model and Layout Results and Analysis

Using the modeling process, typical marina design assumptions, and project-specific design constraints and assumptions, the existing marina, an in-like-kind replacement using DBW-standard fairway widths, and two market mix designs were modeled for both the west and east basin docks to be replaced. The purpose for modeling the existing marina is as a proof of concept to verify that the model is working as intended. The major discrepancies between

the actual marina and the simulation thereof is the dock area and number of piles for both basins and the number of gangways for the west basin. This is expected because design standards were different 30 years ago and the simulation is unable to model the paired docks in the west basin. Otherwise, the simulated number of slips, slip mix, average slip length, and total slip length are all within 2% of the existing marina.

The replacement models were run with the model optimized for the Marina's water space. All detailed model results and slip mix distributions are provided as Appendix B. The slip mix distribution results for the market mix designs were then used as the basis for the Option 1 (smaller market mix) and Option 2 (larger market mix) layouts, which are provided as Appendix C. The slip mix distributions for the layouts differ from the model simulations, because we further optimized use of the water space. However, we attempted to keep the average slip lengths in the layouts as close as possible to the simulation results. For the west basin, we were able to connect the pairs of docks together, thereby reducing the number of gangways to the current count of three.

However, the connecting floating docks increased the dock areas in the layouts compared to the values calculated in the simulations. When discounting this additional dock area in the west basin layouts, the differences between the dock areas in the simulations and layouts is less than 5%, which is excellent. For the east basin the differences between the dock areas in the simulations and layouts is less than 10%, which is a typical amount of difference between both concept methods and within the reasonable bounds of accuracy.

In terms of accessibility, two ADA-compliant 80-foot-long gangways are being proposed for the new west basin docks and one ADA-compliant gangway is being proposed for the new east basin docks. Dock 11 is already accessible by virtue of its existing 80-foot-long gangway. Because the Marina is technically only one facility, only six accessible slips will need to be provided. However, the model run results show a higher combined number of accessible slips because the west and east basins were modeled separately.

The metrics for the existing marina, simulation model results, and conceptual layouts for the west basin, east basin, and total Marina are shown in Tables 3, 4, and 5, respectively. Table 4

only shows the data for the portions of Docks 12, 13, and 14 to be replaced. The data for Docks 8 and 11 and for the wave attenuating docks are provided separately in Table 5.

Slip sizes are typically grouped in ranges of very small boats (32 feet and under), small boats (33 to 37 feet), market mix (38 to 49 feet), cruising yachts (50 to 64 feet), and large yachts and above (65 feet and over). Table 6 provides a comparison between the existing slip size distribution and the distributions for the two conceptual layouts.

Table 3
West Basin Replacement

Metric	Actual Existing	Sim, Existing (Proof of Concept)	Sim, Replace In-Like-Kind Slip Mix	Sim, 36-Foot Avg. Mix Design	Sim, 38-Foot Avg. Mix Design	Option 1 Layout, 36-Foot Avg. Mix	Option 2 Layout, 37.5-Foot Avg. Mix
Basin Area (acre)	8.38	8.38	8.38	8.38	8.38	8.38	8.38
Fairway Width Factor	2.35	2.35	1.75	1.75	1.75	1.75	1.75
Dock Area (sf)	61,800	55,130	63,400	61,230	60,220	66,545	64,766
Slip Mix (feet)							
25	25	26	30	28	25	36	36
30	161	164	189	64	30	20	24
35	77	78	90	75	57	104	60
40	1	NA	NA	69	64	68	65
45	19	20	23	42	50	44	44
50	NA	NA	NA	NA	22	NA	22
Total Slips	283	288	332	278	248	272	251
Total Slip Length (feet)	9,136	9,200	10,605	9,895	9,430	9,840	9,400
Avg. Slip Length (feet)	32.3	32.0	32.0	35.6	38.1	36.2	37.5
Total Parking Required	174	173	200	167	149	164	151
Pile Count	148	84	93	93	109	93	109
Std. Gangways	3	3	4	3	3	1	1
ADA 80-Foot Gangways	NA	3	3	3	2	2	2

Notes:
ADA = Americans with Disabilities Act
Avg. = average
NA = not applicable
sf = square feet
Sim = Simulation Model

Table 4

East Basin Replacement

Metric	Actual Existing	Sim, Existing (Proof of Concept)	Sim, Replace In-Like-Kind Slip Mix	Sim, 50-Foot Avg. Mix Design	Sim, 53-Foot Avg. Mix Design	Option 1 Layout, 51.5-Foot Avg. Mix	Option 2 Layout, 52-Foot Avg. Mix
Basin Area (acre)	4.76	4.76	4.76	4.76	4.76	4.76	4.76
Fairway Width Factor	2.00	2.00	1.88	1.88	1.88	1.88	1.88
Dock Area (SF)	27,147	29,730	30,610	30,820	30,410	32,700	33,116
Slip Mix (feet)							
30	2	2	2	2	2	2	2
35	24	24	25	NA	NA	NA	NA
40	3	3	3	19	5	6	6
45	17	18	18	19	12	16	16
50	16	17	17	21	17	18	18
52	NA	NA	NA	NA	NA	16	NA
55	NA	NA	NA	NA	16	NA	16
60	29	29	31	29	29	28	28
Total Slips	91	93	96	90	81	86	86
Total Slip Length (feet)	4,349	4,420	4,575	4,465	4,270	4,432	4,480
Avg. Slip Length (feet)	47.8	47.7	47.7	49.7	52.9	51.5	52.1
Total Parking Required	55	56	58	54	49	52	52
Pile Count	80	91	91	91	100	100	100
Std. Gangways	3	2	2	2	2	2	2
ADA 80-Foot Gangways	NA	1	1	1	1	1	1

Notes:
ADA = Americans with Disabilities Act
Avg. = average
NA = not applicable
sf = square feet
Sim = Simulation Model

Table 5
Oyster Point Marina Replacement

Metric	Existing East Basin Docks to Remain	Total Marina – Docks 1 to 6, 8, and 11 to 14						
		Actual Existing	Sim, Existing (Proof of Concept)	Sim, Replace In-Like-Kind Slip Mix	Sim, 36- and 50-Foot Avg. Mix Design	Sim, 38- and 53-Foot Avg. Mix Design	Option 1 Layout, 36-Foot Avg. Mix	Option 2 Layout, 37.5-Foot Avg. Mix
Basin Area (acre)	3.05	16.19	16.19	16.19	16.19	16.19	16.19	16.19
Fairway Width Factor	1.75	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dock Area (SF)	19,825	108,772	104,685	113,835	111,875	110,455	119,070	117,707
Slip Mix								
25	NA	25	26	30	28	25	36	36
30	NA	163	166	191	66	32	22	26
35	NA	101	102	115	75	57	104	60
40	3	7	6	6	91	72	77	74
45	19	55	57	60	80	81	79	79
50	NA	16	17	17	21	39	18	40
52	NA	NA	NA	NA	NA	NA	16	NA
55	NA	NA	NA	NA	NA	16	NA	16
60	2	31	31	33	31	31	30	30
65	5	5	5	5	5	5	5	5
Total Slips	29	403	410	457	397	358	387	366
Total Slip Length (feet)	1,420	14,905	15,040	16,600	15,780	15,120	15,692	15,300
Avg. Slip Mix (feet)	49.0	37.0	36.7	36.3	39.7	42.2	40.6	41.8
Total Parking Required	18	247	247	276	239	216	234	221
Pile Count	57	285	232	241	241	266	250	264
Std. Gangways	NA	6	5	6	5	5	3	3
ADA 80-Foot Gangways	2	2	6	6	6	5	5	5

Notes: ADA = Americans with Disabilities Act; Avg. = average; NA = not applicable; sf = square feet; Sim = Simulation Model

Table 6

Slip Size Distribution

Slip Size Range	Existing Marina	Option 1 Layout	Option 2 Layout
32-Feet and Under	46.7%	15.0%	16.9%
33- to 37-Feet	25.1%	26.9%	16.4%
38- to 49-Feet	15.4%	40.3%	41.8%
50- to 64-Feet	11.7%	16.5%	23.5%
65-Feet and Over	1.2%	1.3%	1.4%

Notes:
1. End-ties are considered as two berths. No end-ties are located at the wave attenuating docks on Docks 11 to 14.
2. Berths at side-ties (Docks 1, 8, and 11) are not included.

5 DREDGING

Although the Marina is located adjacent to open waters, as with all coastal marinas and ports, it requires maintenance dredging to maintain adequate water depths for vessels. The Marina was last dredged in 2007 and 2010. According to SMCHD board meeting minutes (SMCHD 2007), current Commissioner Sabrina Brennan's website (SabrinaBrennan.com 2011), and Salt River Construction's website (Salt River Construction 2016), 80,000 cubic yards of material was removed in the west basin in 2007 to improve water depths and 38,000 cubic yards of material was removed in the east basin in 2010 to improve water depths in the entrance channel and east basin in preparation for the new ferry terminal. SMCHD's CIP (Appendix A) indicates that maintenance dredging will be performed within the next 2 to 4 years.

As part of the site visit performed on August 22, 2016, several water depth measurements within the Marina were taken using a lead line, which is a simple device consisting of a weighted disk attached to a measuring tape reel. Lead line measurements are a cursory evaluation of depth and should not be considered a substitute for an accurate sonar bathymetric survey. The recorded depth measurements were adjusted to tide gauge readings at Alameda, because the tide gauge at Oyster Point has not been operational since the 1980s. The adjusted water depths are provided in Table 7.

Table 7
Adjusted Lead Line Water Depths

Dock	Headwalk/ Gangway Landing (feet MLLW)	Average in Slips (feet MLLW)	End Tie (feet MLLW)
Dock 1	5.3	6.3	6.7
Dock 2	4.2	6.2	6.2
Dock 3	4.2	5.7	6.2
Dock 4	3.6	7.1	6.6
Dock 5	3.5	7.0	6.5
Dock 6	4.2	7.2	6.8
Dock 11	3.7	6.7	6.7
Dock 12	6.1	7.1	6.6

Dock	Headwalk/ Gangway Landing (feet MLLW)	Average in Slips (feet MLLW)	End Tie (feet MLLW)
Dock 13	5.6	7.6	7.0
Dock 14	6.9	7.9	8.4
Main Channel	10.2		
Mud Flats/ Swimming Area Demarcation	0 to 3.5		

Notes:
MLLW = mean lower low water
1. Lead line water depths are adjusted based on tide gauge at Alameda.
2. There is a side-tie dinghy tie-up area between Dock 14 and the breakwater. Water depth averaged 5.4 feet within this water space.

5.1 Dredged Material Disposal Sites

There are two primary dredged material disposal sites for projects in the southern portion of San Francisco Bay: SF-11 and SF-DODS (located 50 miles offshore in the Pacific Ocean). The ideal location is SF-11, due to its proximity to the Marina and lack of necessity to transfer materials from a smaller scow able to operate within the Marina basin to a larger scow able to transit the open ocean waters. The Marina qualifies as a small dredger under the U.S. Army Corps of Engineers, San Francisco District's (USACE) Long Term Management Strategy guidelines, meaning that suitable maintenance material (as determined by sediment characterization) can be placed at SF-11.

For dredged material derived from deepening the Marina, costlier disposal options may be required, typically entailing placement at either SF-DODS or a beneficial re-use site such as Montezuma Wetlands. Disposal at SF-DODS also requires additional handling, as scows capable of fitting within the Marina would not be suitable for the trip to the SF-DODS site. Therefore, material would be double-handled by transferring dredged material from the smaller scows to larger scows in open waters just beyond the breakwaters. In addition to double handling and the need for larger scows, more tugs would be required to account for the longer transit time to and from the disposal site. Another option would be to haul the material to a beneficial re-use site, such as Montezuma Wetlands, which is a long distance from the Marina.

5.2 Dredging Design Depth Assumptions

The existing water depths for the east basin do not meet DBW minimum depths and could be adversely affecting the ability to rent those slips. The shallower than minimum depths are due to the 2010 dredging design depths being less than desirable in depth. Although powerboats 45 to 55 feet in length have drafts of 4 to 5 feet, similar-sized sailboats, which are common in the Marina and San Francisco Bay, have 7- to 8-foot drafts under standard operation. The shallow drafts in the east basin restrict vessel access and require sailboats to raise their keels.

The existing water depths in the west basin meet the DBW minimum depths, but they are less than desirable for the larger vessel slips. However, the west basin water depths do not appear to affect operations or the ability to rent slips.

It is not clear whether either the 2007 or the 2010 design depths, as shown on their respective record drawings, is the original design depth of the Marina. Further investigation will be required to determine whether the Marina is permitted to dredge to deeper depths.

The following sections provide a summary of existing design and DBW minimum and desirable water depths.

5.2.1 East Basin

The last known design depth, based on record drawings from the 2010 dredging episode, is -8 feet MLLW for Docks 11 through 14.

5.2.1.1 New Design

- DBW Minimum
  - -6 feet MLLW near shoreline (never previously dredged)
  - -10 feet MLLW in slips and fairways (both main fairway and fairways between docks)
  - The design depth elevation increases from -8 feet to -10 feet. The additional material below -8 feet MLLW may not be permitted for in Bay disposal at Alcatraz

(SF-11) and may require costlier ocean disposal at the San Francisco Deep Ocean Disposal Site (SF-DODS) or at a beneficial re-use site such as Montezuma Wetlands.

- Desirable
  - -8 feet MLLW near shoreline (never previously dredged)
  - -12 feet MLLW in slips and fairways (both main fairway and fairways between docks)
  - The design depth elevation increases from -8 feet to -12 feet. The additional material below -8 feet MLLW may not be permitted for in Bay disposal at SF-11 and will likely require costlier ocean disposal at SF-DODS.

5.2.2 West Basin

The last known design depth, based on record drawings from the 2007 dredging episode, is -8 feet MLLW for Docks 1 through 7.

5.2.2.1 New Design

- DBW Minimum
  - -6 MLLW near shoreline (never previously dredged)
  - -8 in slips and fairways between docks
  - -10 in main fairway
  - The design depth elevation increases from -8 feet to -10 feet. The additional material below -8 feet MLLW may not be permitted for in Bay disposal at SF-11 and may require costlier ocean disposal at SF-DODS, or at a beneficial re-use site such as Montezuma Wetlands.
- Desirable
  - -8 MLLW near shoreline (never previously dredged)
  - -8 MLLW in slips on dock 1 and 2
  - -10 MLLW in slips and fairways between dock 3-6
  - -12 MLLW in main fairway

- The design depth elevation increases from -8 feet to -12 feet. The additional material below -8 feet MLLW may not be permitted for in Bay disposal at SF-11 and will require costlier ocean disposal at SF-DODS.

5.2.3 Dredged Material Volume Estimates

Tables 8 and 9 provide dredged material volume estimates for the DBW minimum and the desirable design water depth scenarios. These values must be confirmed using a multi-beam bathymetric survey.

For dredging projects, a design grade is set, which in these cases are the DBW minimum and desirable depths. Typically, permits for dredging projects allow up to 2 feet of overdepth dredging tolerance. The first foot is paid, because material movement under water is not precise, as it is on land. However, the second foot of the overdepth dredging tolerance is unpaid, because this additional foot is intended to cover errors by the contractor during dredging while safeguarding the project from violating permit conditions.

Table 8

Dredged Material Volume for DBW Minimum Design Water Depth

Area	Design Grade (cy)	Paid 1-Foot Overdepth (cy)	Unpaid 1-Foot Overdepth (cy)	Max. Total Volume (cy)	Total Paid Volume (cy)
Dock 1	2,994	1,613	1,613	6,220	4,607
Dock 2	4,262	2,072	2,072	8,406	6,334
Dock 3	8,129	3,251	3,251	14,632	11,380
Dock 4	3,760	2,767	2,767	9,294	6,527
Dock 5	4,255	3,012	3,012	10,278	7,267
Dock 6	3,259	2,785	2,785	8,828	6,044
Dock 11	13,827	4,199	4,199	22,226	18,026
Dock 12	11,010	3,988	3,988	18,986	14,998
Dock 13	11,718	4,918	4,918	21,554	16,636
Dock 14	4,698	2,698	2,698	10,093	7,396
Entrance Channel/ Ferry Terminal Area	NA	33,756	33,756	67,511	33,756
Back Channel	5,307	1,503	1,503	8,314	6,810
Total	**73,219**	**66,561**	**66,561**	**206,341**	**139,780**

Notes:
cy = cubic yard
NA = not applicable
1. Design Grade is to water depths listed in Table 2.
2. Unpaid 1-foot Overdepth is 2 feet below Design Grade.
3. Maximum Total Volume = Design Grade + Paid 1-Foot Overdepth + Unpaid 1-Foot Overdepth
4. Total Paid Volume = Depth Grade + Paid 1-Foot Overdepth
5. The Ferry Terminal Area includes Dock 8.
6. The water space occupied by Dock 7 is not included.

Table 9
Dredged Material Volume for Desirable Design Water Depth

Area	Design Grade (cy)	Paid 1-Foot Overdepth (cy)	Unpaid 1-Foot Overdepth (cy)	Max. Total Volume (cy)	Total Paid Volume (cy)
Dock 1	3,892	1,613	1,613	7,118	5,505
Dock 2	5,441	2,072	2,072	9,585	7,513
Dock 3	14,632	3,251	3,251	21,135	17,883
Dock 4	9,294	2,767	2,767	14,828	12,061
Dock 5	10,278	3,012	3,012	16,301	13,290
Dock 6	8,828	2,785	2,785	14,397	11,613
Dock 11	22,226	4,199	4,199	30,625	26,425
Dock 12	18,959	3,988	3,988	26,935	22,947
Dock 13	21,553	4,918	4,918	31,389	26,471
Dock 14	9,984	2,698	2,698	15,379	12,682
Entrance Channel/ Ferry Terminal Area	60,288	33,756	33,756	127,799	94,044
Back Channel	8,314	1,503	1,503	11,321	9,817
Total	**193,689**	**66,561**	**66,561**	**326,811**	**260,250**

Notes:
cy = cubic yard
NA = not applicable
1. Design Grade is to water depths listed in Table 2.
2. Unpaid 1-foot Overdepth is 2 feet below Design Grade.
3. Maximum Total Volume = Design Grade + Paid 1-Foot Overdepth + Unpaid 1-Foot Overdepth
4. Total Paid Volume = Depth Grade + Paid 1-Foot Overdepth
5. The Ferry Terminal Area includes Dock 8.
6. The water space occupied by Dock 7 is not included.

6 ESTIMATE OF PROJECT COSTS AND MAXIMUM ANTICIPATED REVENUE

6.1 Slip Fee Review

In the Marina Market Evaluation (Anchor QEA 2016), low and high end slip fees were developed for single and double finger slips for the slip sizes currently in the Marina. These slip fees are presented in Table 10. The mix designs developed for the Marina do not exceed 60-foot-long slips. Additionally, given the relatively low number of existing 65-foot-long slips (five total), their per-lineal-foot fee would be the same as for 60-foot-long slips.

Table 10
Slip Fee Range

Slip Size (feet)	Existing		Proposed Low End		Proposed High End	
	Single Finger	Double Finger	Single Finger	Double Finger	Single Finger	Double Finger
25/26	NA	$8.40	NA	$7.95	NA	$8.83
30	$7.70	$8.05	$7.36	$8.00	$8.96	$9.60
35/36	$7.96	$8.25	$8.10	$8.80	$9.86	$10.56
40	$8.01	$8.27	$8.75	$9.51	$10.65	$11.41
45	$7.93	$8.28	$9.14	$9.93	$11.12	$11.92
50/52	$7.98	$8.30	$9.48	$10.30	$11.54	$12.36
55	NA	$8.30	$9.79	$10.64	$11.91	$12.76
60/65	$7.96	$8.31	$10.07	$10.95	$12.26	$13.14

Notes:
NA = not applicable
1. Rates shown are per lineal foot unless noted otherwise.
2. Rates for side ties and end ties over 60 feet in length are based on 60-foot double finger rates.

6.2 Estimated Construction and Soft Costs and Financial Metrics

Table 11 summarizes the estimated marina construction, dredging, and soft costs. The total estimated project costs for each scenario are also provided. All of the costs provided are rough-order-of-magnitude (ROM) costs. These costs will be refined with selection of project elements such as inclusion of new wastewater pumpout, restroom remodels, desirable or luxury boater amenities, and dredging depth; marina utility upgrade requirements; and progression of design work, including any modifications to the concept layout and slip mix.

For consistency with the Table 5 summary, the simulation models used as the basis for the conceptual layouts are listed in Table 11.

Table 12 summarizes the estimated 100% occupancy revenue and resulting simple payback period, as well as the estimated annual preventative maintenance costs for the Marina and estimated 5-year-interval maintenance dredging costs for each scenario.

Table 11
Estimated Construction and Soft Costs for Oyster Point Marina Replacement

Metric	Total Marina – Docks 1 to 6, 8, and 11 to 14					
	Sim, Existing (Proof of Concept)	Sim, Replace In-Like-Kind Slip Mix	Sim, 36- and 50-Foot Avg. Mix Design	Sim, 38- and 53-Foot Avg. Mix Design	Option 1 Layout, 36-Foot Avg. Mix	Option 2 Layout, 37.5-Foot Avg. Mix
Dredging Scenario	Minimum	Minimum	Desirable	Desirable	Desirable	Desirable
Estimated Dredging Construction Cost (x 1,000)	$4,344	$4,344	$13,830	$13,830	$13,830	$13,830
Estimated Marina Construction Cost (x 1,000)	$17,157	$18,865	$18,598	$18,303	$18,927	$18,795
Estimated Project Soft Costs (x 1,000)	$3,230	$3,503	$3,460	$3,413	$3,512	$3,426
Total Estimated Project Cost (x 1,000)	**$24,731**	**$26,712**	**$35,888**	**$35,546**	**$36,269**	**$36,051**

Notes:
1. Estimated Marina Reconstruction costs include 10% for General Contractor overhead and profit and 10% for design contingency.
2. Estimated Dredging Construction Costs include $500,000 for mobilization and demobilization and 10% for contingency. The dredging unit costs have built-in contractor overhead and profit.
3. All numbers are in 4th quarter 2016 dollars.

Table 12
Estimated Revenue, Financial Metrics, and Estimated Ongoing Maintenance Costs for Oyster Point Marina Replacement

Metric	Total Marina – Docks 1 to 6, 8, and 11 to 14					
	Sim, Existing (Proof of Concept)	Sim, Replace In-Like-Kind Slip Mix	Sim, 36- and 50-Foot Avg Mix Design	Sim, 38- and 53-Foot Avg. Mix Design	Option 1 Layout, 36-Foot Avg. Mix	Option 2 Layout, 37.5-Foot Avg. Mix
Slip Fee Structure Used	Low	Low	High	High	High	High
Maximum Estimated Annual Revenue (x 1,000)	$1,502	$1,799	$2,142	$2,120	$2,153	$2,129
Simple Payback Period (Years)	16.5	14.8	16.8	16.8	16.8	16.9
Estimated Annual Marina Preventative Maintenance Cost	$56,000	$59,000	$57,000	$56,000	$59,000	$58,000
Maintenance Dredging Cost (x 1,000; Every 5 Years)	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000

Notes:
1. Maximum estimate annual revenue is based on 100% occupancy, no live-aboards, no side-ties, and no full-length end-ties. Currently, Oyster Point Marina charges live-aboards a separate rate independent of slip length. Typically, live-aboards are charged a rate 150% times the standard fee for a given slip.
2. Maximum estimated annual revenue for each scenario includes $174,000 of revenue from Dock 11 slips under the low end model and $208,000 under the high end model. Side tie revenue is not included.
3. All numbers are in 4th quarter 2016 dollars.

6.2.1 *Estimated Marina Construction and Soft Costs Basis*

The estimated costs of construction, estimated soft costs, and estimated annual preventative maintenance costs are based on a concrete dock system. For proprietary concrete dock systems, the design package is a combination of prescriptive drawings and specifications for utilities, platforms, and piles; and performance drawings and specifications for the dock system, gangways, and gates. These latter elements are design/build components from the fabricator/contractor. The following are construction cost assumptions for the Marina:

- Required items such as domestic and fire water service, electrical service, and dock boxes, as well as desirable items such as secured access and telecommunication services, are included.
- Demolition costs are estimated as follow:
  - $12 per square foot for floating docks, including all appurtenances
  - $3,000 per guide pile
  - $5,000 per gangway
  - $15,000 per gangway platform including support piles
  - $100,000 total for landside infrastructure (split evenly between west and east basins)
- New dock construction costs are estimated as follow:
  - $85 per square foot for floating docks, including all appurtenances
  - $9,000 per guide pile
  - $20,000 per standard 40-foot-long gangway
  - $45,000 per ADA-compliant 80-foot-long gangway
  - $35,000 per standard gangway platform (assumes reconstruction of existing platform with existing piles to remain)
  - $70,000 per all new pile-supported platform in new location to handle ADA gangway including new support piles
- Dock Utilities
  - $3,750 to $5,000 per vessel for electrical, depending on vessel size
  - $20,000 for on-dock step-down transformers and electrical distribution panels
  - $500 per vessel for telecommunication service
  - $1,500 per vessel for domestic and fire water service
- Landside Allowances
  - $70,000 allowance for new fencing, gates, and security (split evenly between west and east basins)
  - $450,000 allowance for landside infrastructure replacement and upgrades along the shoreline (split evenly between west and east basins)
- Other line item costs:

- Mobilization and demobilization costs equal to 2% of sub-total construction costs (i.e., before overhead, profit, and contingency)
- Water quality best management practices during construction equal to 0.5% of sub-total construction costs (i.e., before overhead, profit, and contingency)
- Contractor overhead and profit (OH&P) equal to 10% of sub-total construction costs
- Project contingency equal to 10% of sub-total construction costs plus OH&P

Dock appurtenances include all rub rails, corner bumps, pile guides, cleats, and dock boxes. If a new wastewater pump out system is desired, the following are proposed allowances:

- $50,000 for the on-dock pump including stanchion, hose, and waterside piping
- $75,000 for landside sewer infrastructure

Marina soft costs are based on 17.5% of the estimated marina sub-total construction cost plus contractor OH&P, as is typical for this stage of evaluation, and are composed of 6% to 10% for design, 1% to 2% for public relations, legal support, and community outreach, 1% to 2% for permitting, 4% to 6% for construction management and engineering support, and 1% to 2% for inspection and testing. The median value of each range is used.

Construction costs for a comparable aluminum dock system or a timber dock system from a reputable contractor or package system are roughly the same. Soft costs for an aluminum dock system is comparable with a concrete dock system. For a timber dock system, soft costs may be higher if the engineer is responsible for flotation calculations. Preventative maintenance cost will be higher for timber docks, because typical Douglas fir decking needs to be flipped 10 to 12 years after installation and replaced 15 to 20 years after installation. Hardwood lumber such as Ipe has a longer life cycle and thus lower maintenance costs, but that is offset by higher capital costs. Maintenance costs for an aluminum dock system may be higher than the cost shown, depending on the type of deck surface selected. Study and Concept Estimates of Marina Construction Costs are provided as Appendix D.

6.2.1.1 *Preventative Maintenance Costs*

Annual preventative maintenance costs were also developed for the Marina scenarios. For standard concrete docks, a cost of $2.25 per lineal foot of fingers, mainwalks, and headwalks was estimated for Docks 1 through 6, 8, and 11 through 14. For wave attenuating docks, a cost of $5.00 per lineal foot was applied. In addition to dock maintenance, other components, such as gangways, platforms, gates, and restrooms, need to be maintained. An allowance of $10,000 was provided for those items for the entire Marina.

A concrete dock system is designed for an average useful life of 45 to 50 years. Timber and aluminum dock systems are designed for an average useful life of 40 years. Wave attenuating concrete docks are designed to take punishing abuse in order to protect the docks on their leeward side. Therefore, wave attenuating concrete docks only have a design life of 25 to 30 years.

6.2.2 *Estimated Dredging Construction and Soft Costs Basis*

Dredging costs were estimated based on the following assumptions:

- All material that is considered maintenance (e.g., within currently permitted design depths) will be placed at SF-11 (assuming the material is chemically suitable) at a cost of $25 per cubic yard in 2016 dollars. All of the DBW minimum material volumes listed in Table 8 are assumed to be suitable for placement at SF-11 at the stated rate. This assumption will need to be confirmed against historical dredge depths and locations, as well as future sediment characterization and USACE Dredged Material Management Office (DMMO) coordination.
- All material that is considered deepening will be placed at SF-DODS at a cost of $55 per cubic yard in 2016 dollars. The material may also be placed at a beneficial reuse site, such as Montezuma Wetlands. It is assumed that the difference in volumes between the DBW minimum volumes in Table 8 and the desirable volumes in Table 9 will be placed at SF-DODS at the stated rate. This assumption will need to be confirmed against historical depths and locations, as well as future sediment characterization and DMMO coordination.
- Mobilization, demobilization, surveying, and environmental analysis costs of $500,000 are assumed for both scenarios.

- Project contingency is assumed to be equal to 10% of sub-total dredging costs plus OH&P.
- Contractor OH&P is included in the dredging unit costs.
- An amount of $500,000 is used for pre-design material sampling, design, and permitting soft costs.

The estimated dredging construction costs are $4,344,000 for the DBW minimum and $13,830,000 for desirable depths.

6.2.2.1 Maintenance Dredging Costs

Maintenance dredging costs are ROM costs and are based on recent dredging projects at local marinas in San Francisco Bay as well as the above assumptions. For both dredging depth scenarios, maintenance dredging costs are estimated at $2,000,000 for the entire Marina every 5 years. It is assumed that deeper design depths do not affect water velocities and depositional rates and that once the initial deepening is performed, all maintenance dredged material can be placed at the SF-11 site rather than ocean disposal at SF-DODS.

6.3 Summary of Estimated Project Costs and Financial Metrics

The summary of estimated project costs and financial metrics are provided in Tables 11 and 12, respectively. The two conceptual layouts have estimated Marina construction costs just under $19 million, with estimated dredging construction costs of approximately $14 million and estimated soft costs of approximately $3.5 million, resulting in total project costs of just over $36 million. Preventative maintenance costs are estimated to be approximately $60,000 annually, and maintenance dredging costs are estimated to be $2 million every 5 years. All of these costs are in 2016 dollars and do not assume the cost of money such as bond issuance, interest payments, or depreciation.

Using the proposed high end slip fees for double finger, single wide slips, as presented in Table 10, the estimated annual revenue for both conceptual layouts at 100% occupancy is between $2,125,000 and $2,150,000. This estimated revenue does not account for live-aboards or the cost of money. Currently, the Marina charges a flat fee of $350 for live-aboards. Typically, live-aboards are charged a surcharge on standard slip fees to recoup

increased water usage (both on dock and in boater restrooms) and increased assistance from the harbormaster. Given these assumptions, the simple payback period using the total project cost and 100% annual revenue, and not including operation and maintenance costs, phasing, or the cost of money, is approximately 16.9 years.

Discounting dredging, which needs to be performed in some fashion in order to maintain operation of the Marina, results in a more reasonable simple payback period of 10.4 years. Dredging depths are one of the items which can be evaluated further as concept and construction document design progress. For example, sailboat-only dock strings can be created wherein water depths are deeper than for similar length powerboat slips.

6.3.1 Comparison to 2014 Marina Condition Survey

The replacement cost in the 2014 Marina Condition Survey for Docks 1 through 6 and 12 through 14, including new guide piles and gangway abutments, but not including gangways or landside utilities, was estimated at $13,140,000. This is only the replacement cost and does not appear to include demolition, contingency, or soft costs. Based on our estimates of construction cost, demolition is approximately 14% of the sub-total replacement cost. Therefore, multiplying the 2014 Marina Condition Survey replacement cost by 125% (14% for demolition plus 10% on sub-total amount for contingency) gives a total construction cost of $16,425,000, which is comparable to our Simulated Existing (as-is) replacement cost of $17,132,000.

7 PROJECT PHASING DISCUSSION

The replacement of the Marina is not intended to be completed in a single phase. Completing the Marina in a single phase would require a large single outlay of money as well as displacement of over 300 tenants, who generate revenue for the Marina. Therefore, the dock replacement should be completed over multiple years. It is estimated that it will take 10 years to replace the Marina completely. Given the condition of Docks 12, 13, and 14, they should be given priority and replaced as soon as design, permits, and funds are available. The 3-year phasing plan outlined in the SMCHD CIP is reasonable. Under this plan, one dock string will be replaced per year.

With proper maintenance, the west basin docks should have 5 to 10 years of remaining useful life. This provides time to complete the design, acquire permits, and secure funding. Because the docks in the west basin are in three pairs, it would be prudent to replace them in similar pairs. This can be done in consecutive years or spaced over a 5-year period with "dead" years in between. This will allow the new concrete docks to be in operation into the second half this century.

8 REFERENCES

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SabrinaBrennan.com, 2011. Oyster Point Marina Ferry Service. September 2, 2011. Available from: http://sabrinabrennan.com/blog/2011/9/3/oyster-point-marina-ferry-service.html.

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APPENDIX A
SMCHD CAPITAL IMPROVEMENT PLAN

FINAL OPERATING AND CAPITAL BUDGET
2016/17 FISCAL YEAR

APPENDIX 2:

CAPITAL IMPROVEMENTS PLAN,
2016/17 – 2020/21

Pillar Point Harbor	2016-17	2017-18	2018-2019	2019-2020	2020-2021	
ADA survey and plan ***Prof. Services***	$ 75,000					
Replace H Dock then additional commercial docks ***Design, engineering in '16/'17***	$ 75,000	$ 2,500,000			$ 2,500,000	Wider boats need wider slips; 65 o/s, 50 i/s
Dock fingers ***Permits recd; ready to bid***	$ 600,000	$ 500,000			$ 600,000	12 fingers permitted already some will be unnecessary if H dock replaced (G Dock?)
Pier deck and piling replacement ***Will do pile survey now; may be too conservative***	$ 250,000	$ 250,000				Refr area, fender piles, work dock
Replace water (domestic) to floats from pier, including flex lines ***Plumbing repairs***	$ 10,000		$ 10,000			
Electrical Underground (replace non-traffic covers and rings) ***Electrical repairs***	$ 75,000					
Paving maintenance and replacement ***Pavement engineer to plan; phased impl.***	$ 200,000	$ 100,000	$ 100,000	$ 100,000		From boat ramp, all parking lots; some slurry seal, some R&R
Light Pole Retrofits to LED Energy Savings ***Multiple lights out; safety - spec and bid***	$ 150,000					25 of 72 heads retrofitted already; 13 non-op (safety); energy saving
Replacement truck and cart ***Purchase truck; spec and get quotes***	$ 40,000		$ 15,000			
Flow Meters (required) on sewer lift stations ***Plumbing 'repair'***	$ 50,000					
Romeo Pier Demolition ***Applied for permits; bid demo***	$ 600,000					
Dredging ***Plan for maintenance permit, all areas***	$ 200,000	$ 400,000	$ 850,000	$ 500,000		Maintenance permit, ; boat ramp; inner harbor, inner breakwater etc
Fishing Pier Rip Rap (dollars included in "Public Access" totals)	$ 25,000	$ 250,000		$ 350,000		1) stabilize rip rap; 2) widen path (cantilver deck?)
Radon re-build ***By Radon Boatworks***	$ 350,000	(Carry over of 2015/16 funds included)				Rebuilt hull; new motors, electronics; possible DBW grant funding
Trail to Mavericks: ***other agencies (USAF, SM Co. Parks)?***	$ 150,000	$ 300,000				
Harbor Office Remodel (ADA, Services)	$ 50,000	$ 200,000				Investigate alternatives; subject to Vision/Strategic Plan
Utility upgrades (water, electricity); pier	$ 150,000	$ 300,000	$ 150,000			Elec to fish buyers, transformers A,B,C docks plus other
Piling replacement at sales dock PPH	$ 20,000					
Johnson Pier Work Dock area - addtl space (portion of TIGER)	$ 100,000	$ 1,000,000	$ 1,000,000			
Storm drain box replacements	$ 60,000	$ 60,000				Old boxes; filtration system ready to go; new filtration systems incl.
Remodel of Launch Ramp Restrooms (and design/permit)	$ 50,000	$ 250,000				Possibly a Grant candidate
New trench drains at boat ramp area PPH Specs	$ 40,000					
Oil spill trailer	$ 18,000					Grant funding
Enlarge sidewalks at commercial area. Overall PPH site plan (Portion in 15/16 budget)	$ 150,000					Investigate alternatives; subject to Vision/Strategic Plan
Fire Line Feeder (flex lines) replace		$ 10,000	$ 20,000			
Exterior Building Painting		$ 150,000				
4 cargo containers to replace trailer for storage at maintenance yard area PPH		$ 20,000				
Sidewalk Improvements on promenade		$ 150,000				Investigate alternatives; subject to Vision/Strategic Plan
Conversion of Construction Doc's and Blueprints to Electronic		$ 50,000				
Fire Lines access and replace as necessary (valves etc)			$ 75,000			
Entry Signage Hwy 1 and Capistrano, permitting and design; construction			$ 30,000	$ 60,000		
Facility Condition Survey-5 year forecast			$ 35,000			
Laundry (design, permit, construction)				$ 75,000	$ 500,000	Revenue Generator
Pillar Point Harbor Totals	**$3,488,000**	**$ 6,490,000**	**$ 2,285,000**	**$ 1,085,000**	**$ 3,600,000**	

Oyster Point Marina / Park	2016-17	2017-18	2018-2019	2019-2020	2020-2021	
Transformers on Docks 1 - 6 ***Spec, bid, build***	**$ 250,000**					
Replacement Truck ***Get quote with PPH truck***	**$ 40,000**					
Bait shop ***depends on result of RFP***	**$ 60,000**					
Harbor Dredging ***Plan and permit for '17/'18 dredge***	**$ 30,000**	$ 200,000	$ 200,000	$ 200,000		Alcatraz Dump Site Closing
Maint. Bldg. settling; develop and implement solution ***Survey and eng***	**$ 20,000**	$ 75,000				
Paving maintenance and replacement ***Cooperate w SSF re locations, drainage etc***	**$ 100,000**	$ 100,000	$ 100,000	$ 10,000	$ 10,000	
Paving /storm water at new r/room bldg	$ 40,000					Possible combine with above; could combine w ex. project
Asphalt Marina Gravel Parking lot with asphalt		$ 100,000				Possible combine with below; could combine w ex. project
Oil spill trailer	$ 18,000					Grant funding
Replacement of docks 12, 13, 14	$ 75,000	$ 1,280,000	$ 1,560,000	$ 750,000		Design, implement docks 12, 13, then 14 for side ties only
Landscaping; tree replacement	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	
Culvert catch basin filtration/separators		$ 20,000				
West Restrooms Remodels		$ 300,000				
3 Electric Dump Cart/Golf Cart type vehicles		$ 15,000	$ 15,000	$ 15,000		
Facility Condition Survey-5 year forecast			$ 20,000			
Landscaping tractor					$ 35,000	
Oyster Point Marina / Park Totals	**$ 643,000**	**$ 2,100,000**	**$ 1,905,000**	**$ 985,000**	**$ 55,000**	

Administration

Replacement System for The Marina Program (Financial System)		**$ 60,000**				
Phone system		$ 75,000				
Administration Totals	**$ -**	**$ 135,000**	**$ -**	**$ -**	**$ -**	
Combined Totals	**4,131,000**	**8,725,000**	**4,190,000**	**2,070,000**	**3,655,000**	

APPENDIX B
SIMULATION MODEL RESULTS

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

for Single Slips

SCENARIO NAME: West Basin Existing Simulation

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	32.0 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	61,800
Existing Pile Count (Estimated):	148
Proposed Dock Area (Sq Ft, Simulated):	55,130
Proposed Pile Count (Simulated):	84
Estimated Annual Revenue [1]:	$892,000
Estimated Total Project Cost:	$12,801,000
Simple Payback Period [2]:	14.35 Years
Estimated Annual Maintenance Cost:	$30,215

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	2.35
Parking Space Factor	0.60
Total Area (Acres)	8.38

SLIPS PER ACRE:	34.4
TOTAL SLIPS:	288
LINEAL FEET OF SLIPS PER ACRE:	1100
TOTAL LINEAR FEET OF SLIPS:	9200

SLIP MIX DESIGN

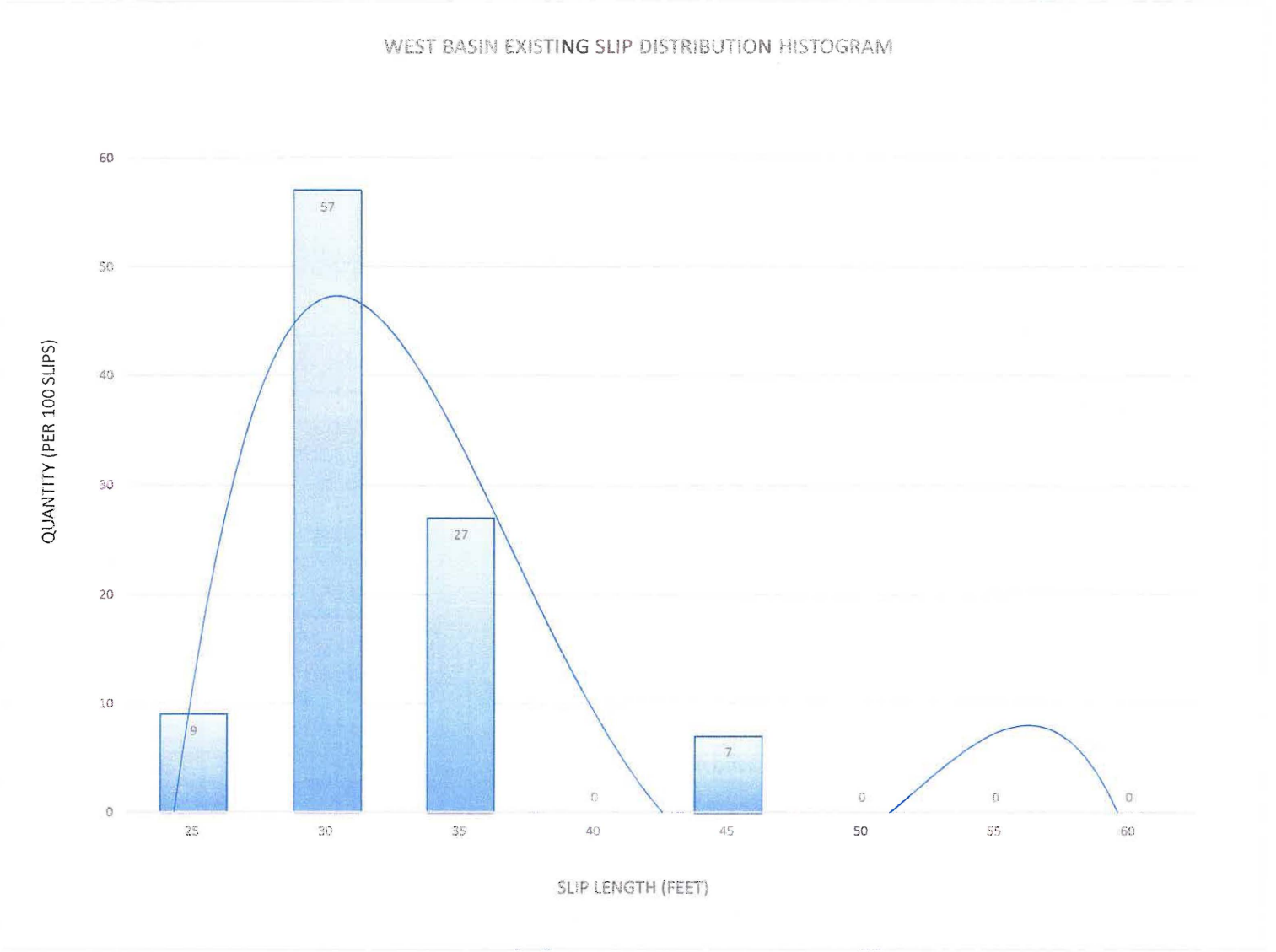
Boat Length (ft)	Quantity	Percent of Total
25	26	9.0%
30	164	56.9%
35	78	27.1%
40	0	0.0%
45	20	6.9%
50	0	0.0%
55	0	0.0%
60	0	0.0%

PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	173

ADA REQUIREMENTS

Minimum Number of ADA Slips:	5
Min. No. of ADA Parking Spaces:	6
No. of Van Spaces of Total ADA:	1


WEST BASIN EXISTING SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
60
50
40
30
20
10
0
9
57
27
0
7
0
0
0
25
30
35
40
45
50
55
60
SLIP LENGTH (FEET)

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

for Single Slips

SCENARIO NAME: West Basin In-Like-Kind

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	32.0 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	61,800
Existing Pile Count (Estimated):	148
Proposed Dock Area (Sq Ft, Simulated):	63,400
Proposed Pile Count (Simulated):	93
Estimated Annual Revenue [1]:	$1,071,000
Estimated Total Project Cost:	$14,741,000
Simple Payback Period [2]:	13.76 Years
Estimated Annual Maintenance Cost:	$34,219

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	1.75
Parking Space Factor	0.60
Total Area (Acres)	8.38

SLIPS PER ACRE:	39.6
TOTAL SLIPS:	332
LINEAL FEET OF SLIPS PER ACRE:	1265
TOTAL LINEAR FEET OF SLIPS:	10605

SLIP MIX DESIGN

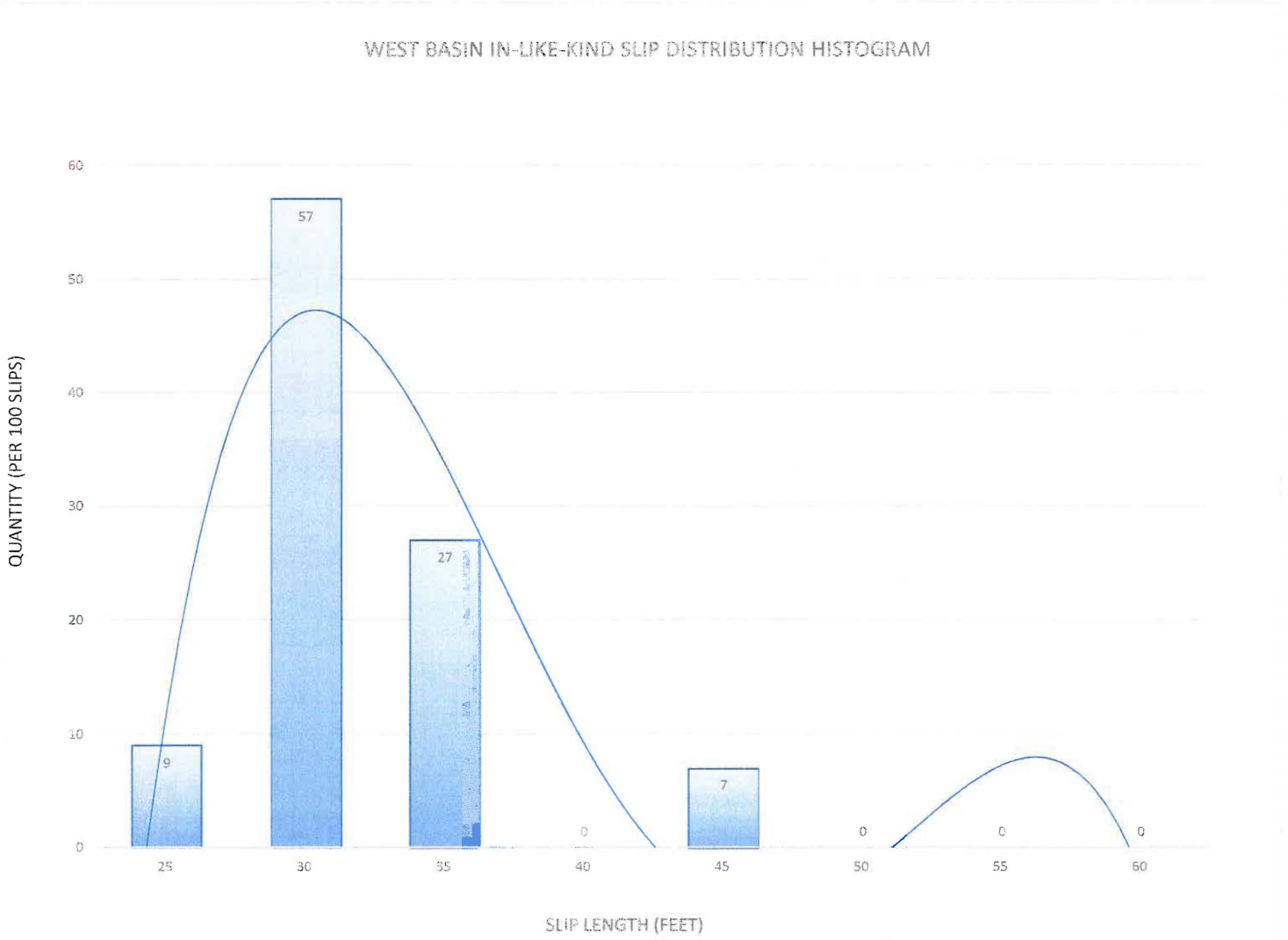
Boat Length (ft)	Quantity	Percent of Total
25	30	9.0%
30	189	56.9%
35	90	27.1%
40	0	0.0%
45	23	6.9%
50	0	0.0%
55	0	0.0%
60	0	0.0%

PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	200

ADA REQUIREMENTS

Minimum Number of ADA Slips:	6
Min. No. of ADA Parking Spaces:	6
No. of Van Spaces of Total ADA:	1


WEST BASIN IN-LIKE-KIND SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
60
50
40
30
20
10
0
9
57
27
0
7
0
0
0
25
30
35
40
45
50
55
60
SLIP LENGTH (FEET)

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

for Single Slips

SCENARIO NAME: West Basin 36-Foot Slip Mix

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	35.6 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	61,800
Existing Pile Count (Estimated):	148
Proposed Dock Area (Sq Ft, Simulated):	61,230
Proposed Pile Count (Simulated):	93
Estimated Annual Revenue [1]:	$1,274,000
Estimated Total Project Cost:	$14,095,000
Simple Payback Period [2]:	11.06 Years
Estimated Annual Maintenance Cost:	$31,976

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	1.75
Parking Space Factor	0.60
Total Area (Acres)	8.38

SLIPS PER ACRE:	33.1
TOTAL SLIPS:	278
LINEAL FEET OF SLIPS PER ACRE:	1179
TOTAL LINEAR FEET OF SLIPS:	9895

SLIP MIX DESIGN

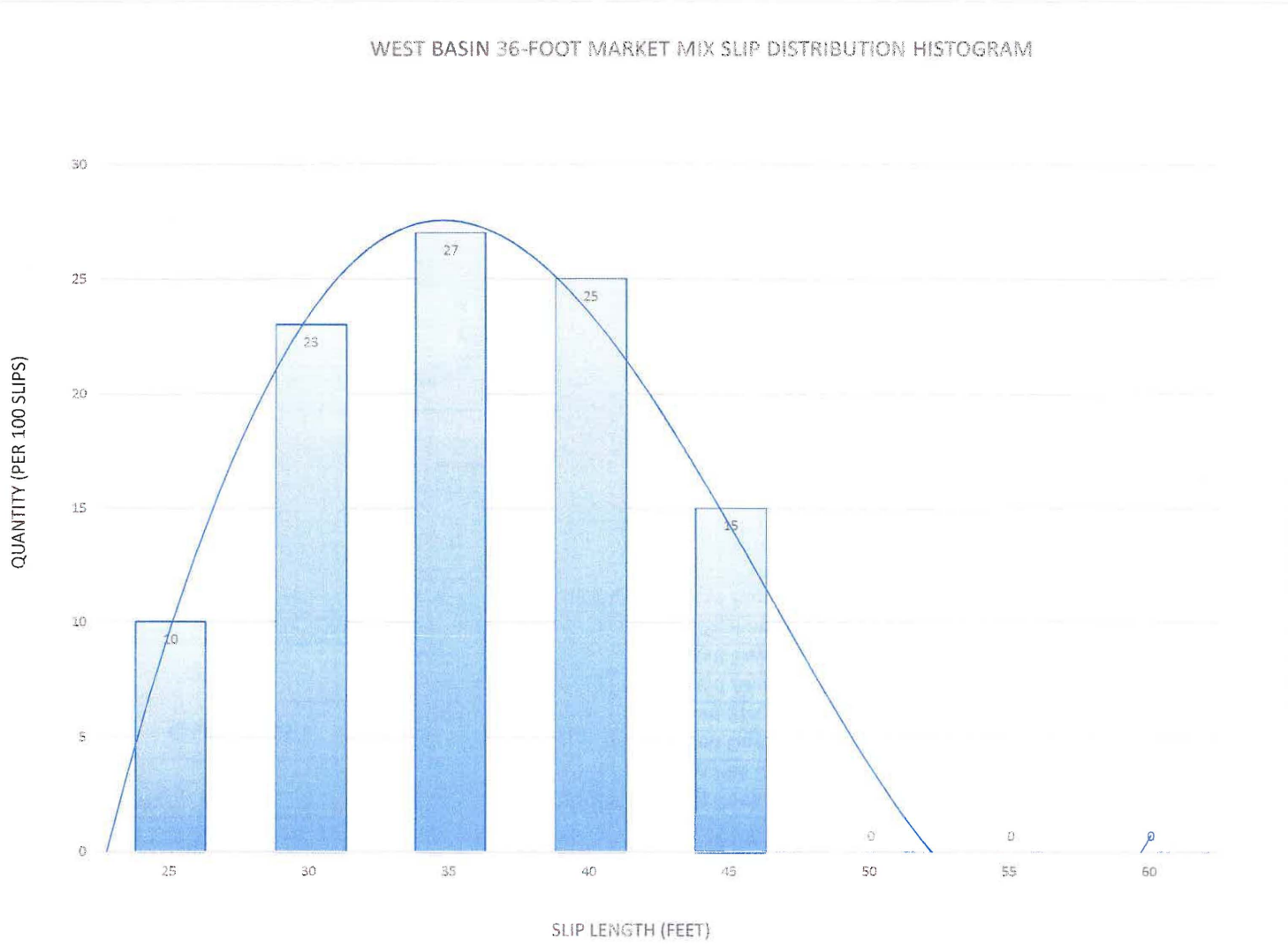
Boat Length (ft)	Quantity	Percent of Total
25	28	10.1%
30	64	23.0%
35	75	27.0%
40	69	24.8%
45	42	15.1%
50	0	0.0%
55	0	0.0%
60	0	0.0%

PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	167

ADA REQUIREMENTS

Minimum Number of ADA Slips:	5
Min. No. of ADA Parking Spaces:	6
No. of Van Spaces of Total ADA:	1


WEST BASIN 36-FOOT MARKET MIX SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
30
25
20
15
10
5
0
10
23
27
25
15
0
0
0
25
30
35
40
45
50
55
60
SLIP LENGTH (FEET)

Client: City of South San Francisco
Project: Oyster Point Marina
Location: South San Francisco

Simulation Run: West Basin 38-Foot Average Mix Design
Slip Mix Constrained
Date: 9/30/2016

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

for Single Slips

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

SCENARIO NAME: West Basin 38-Foot Slip Mix

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	38.1 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	61,800
Existing Pile Count (Estimated):	148
Proposed Dock Area (Sq Ft, Simulated):	60,220
Proposed Pile Count (Simulated):	109
Estimated Annual Revenue (1):	$1,258,000
Estimated Total Project Cost:	$13,753,000
Simple Payback Period (2):	10.93 Years
Estimated Annual Maintenance Cost:	$30,549

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	1.75
Parking Space Factor	0.60
Total Area (Acres)	8.38

SLIPS PER ACRE:	29.6
TOTAL SLIPS:	248
LINEAL FEET OF SLIPS PER ACRE:	1125
TOTAL LINEAR FEET OF SLIPS:	9430

SLIP MIX DESIGN

Boat Length (ft)	Quantity	Percent of Total
25	25	10.1%
30	30	12.1%
35	57	23.0%
40	64	25.8%
45	50	20.2%
50	22	8.9%
55	0	0.0%
60	0	0.0%

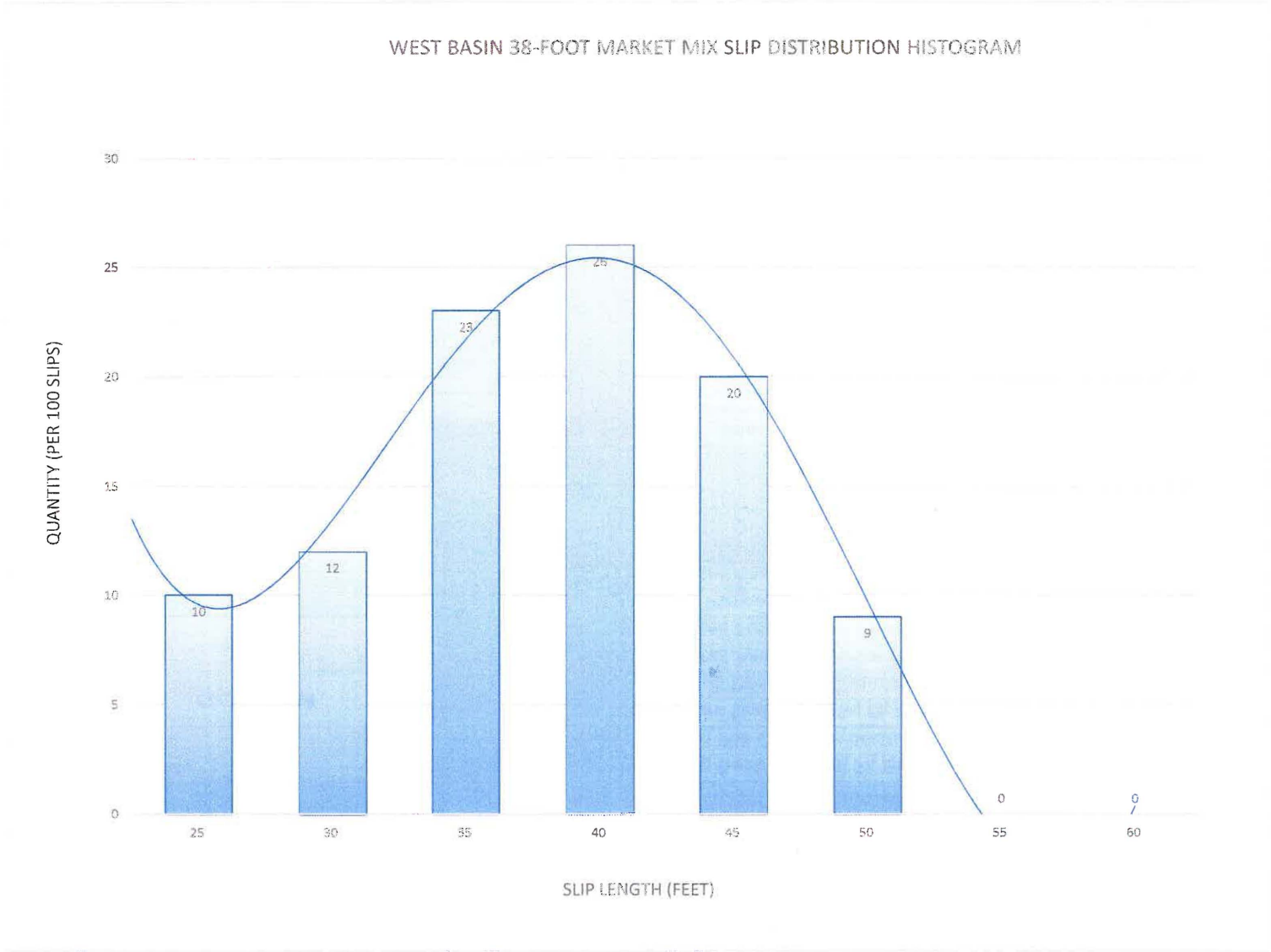
PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	149

ADA REQUIREMENTS

Minimum Number of ADA Slips:	5
Min. No. of ADA Parking Spaces:	5
No. of Van Spaces of Total ADA:	1

In-Like-Kind slip mix replacement using standard 1.75x fairways.


WEST BASIN 38-FOOT MARKET MIX SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
30
25
20
15
10
5
0
10
12
23
26
20
9
0
0
25
30
35
40
45
50
55
60
SLIP LENGTH (FEET)

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

for Single Slips

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

SCENARIO NAME: East Basin Existing Simulation

SELECT THE FOLLOWING : (Using Dropdown Menus)	
Distribution Type:	CUSTOM
Average Slip Length:	47.7 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	27,147
Existing Pile Count (Estimated):	80
Proposed Dock Area (Sq Ft, Simulated):	29,730
Proposed Pile Count (Simulated):	91
Estimated Annual Revenue [1]:	$436,000
Estimated Total Project Cost:	$7,086,000
Simple Payback Period [2]:	16.25 Years
Estimated Annual Maintenance Cost:	$16,236

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	2.00
Parking Space Factor	0.60
Total Area (Acres)	4.76

SLIPS PER ACRE:	19.5
TOTAL SLIPS:	93
LINEAL FEET OF SLIPS PER ACRE:	927
TOTAL LINEAR FEET OF SLIPS:	4420

SLIP MIX DESIGN

Boat Length (ft)	Quantity	Percent of Total
25	0	0.0%
30	2	2.2%
35	24	25.8%
40	3	3.2%
45	18	19.4%
50	17	18.3%
55	0	0.0%
60	29	31.2%
65	0	0.0%
70	0	0.0%
75	0	0.0%

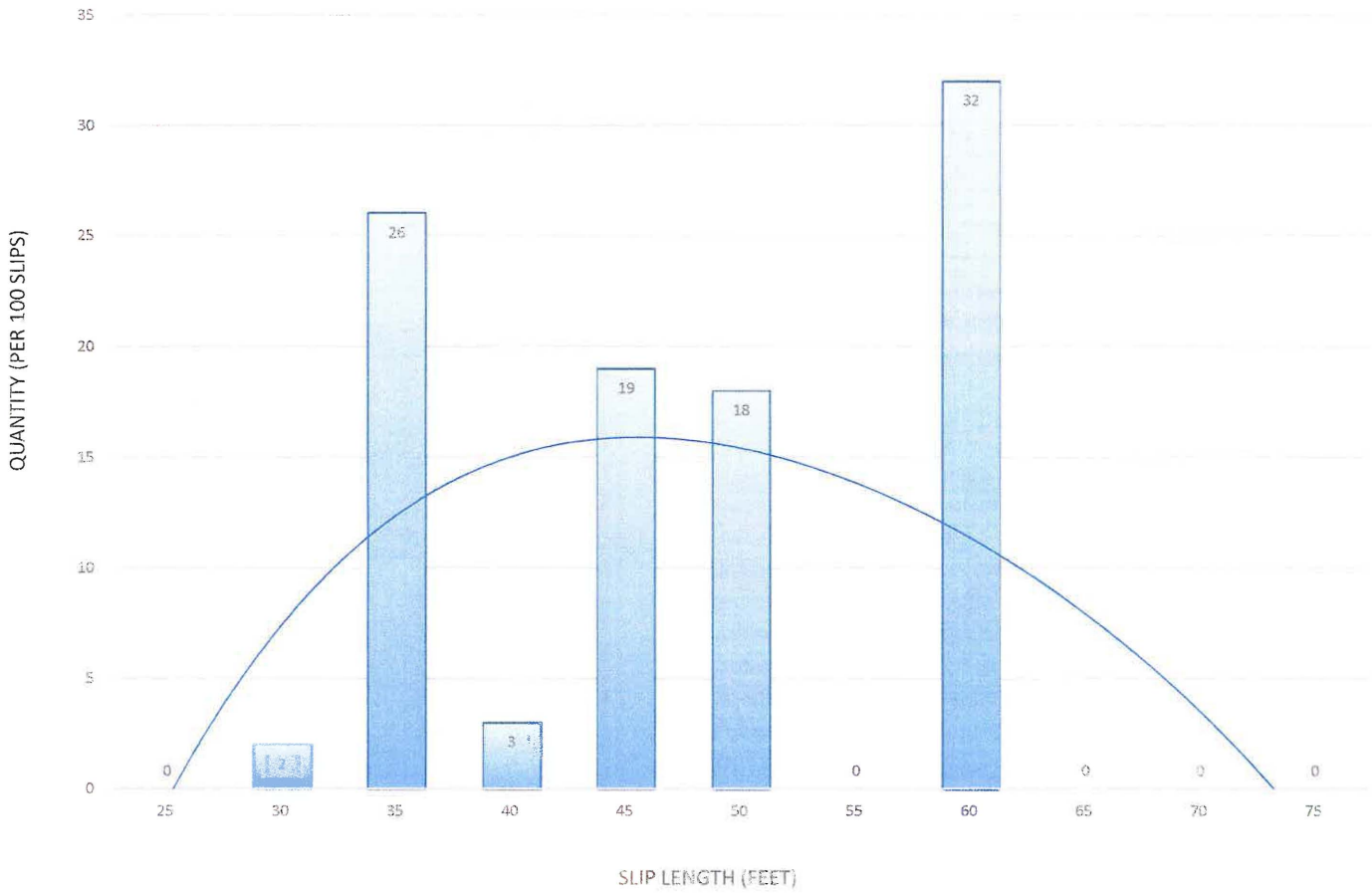
PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	56

ADA REQUIREMENTS

Minimum Number of ADA Slips:	3
Min. No. of ADA Parking Spaces:	3
No. of Van Spaces of Total ADA:	1

EAST BASIN EXISTING SLIP DISTRIBUTION HISTOGRAM



MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

for Single Slips

SCENARIO NAME: East Basin In-Like-Kind

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	47.7 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	27,147
Existing Pile Count (Estimated):	80
Proposed Dock Area (Sq Ft, Simulated):	30,610
Proposed Pile Count (Simulated):	91
Estimated Annual Revenue (1):	$554,000
Estimated Total Project Cost:	$7,127,000
Simple Payback Period (2):	12.86 Years
Estimated Annual Maintenance Cost:	$15,424

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	1.88
Parking Space Factor	0.60
Total Area (Acres)	4.76

SLIPS PER ACRE:	20.0
TOTAL SLIPS:	96
LINEAL FEET OF SLIPS PER ACRE:	955
TOTAL LINEAR FEET OF SLIPS:	4575

SLIP MIX DESIGN

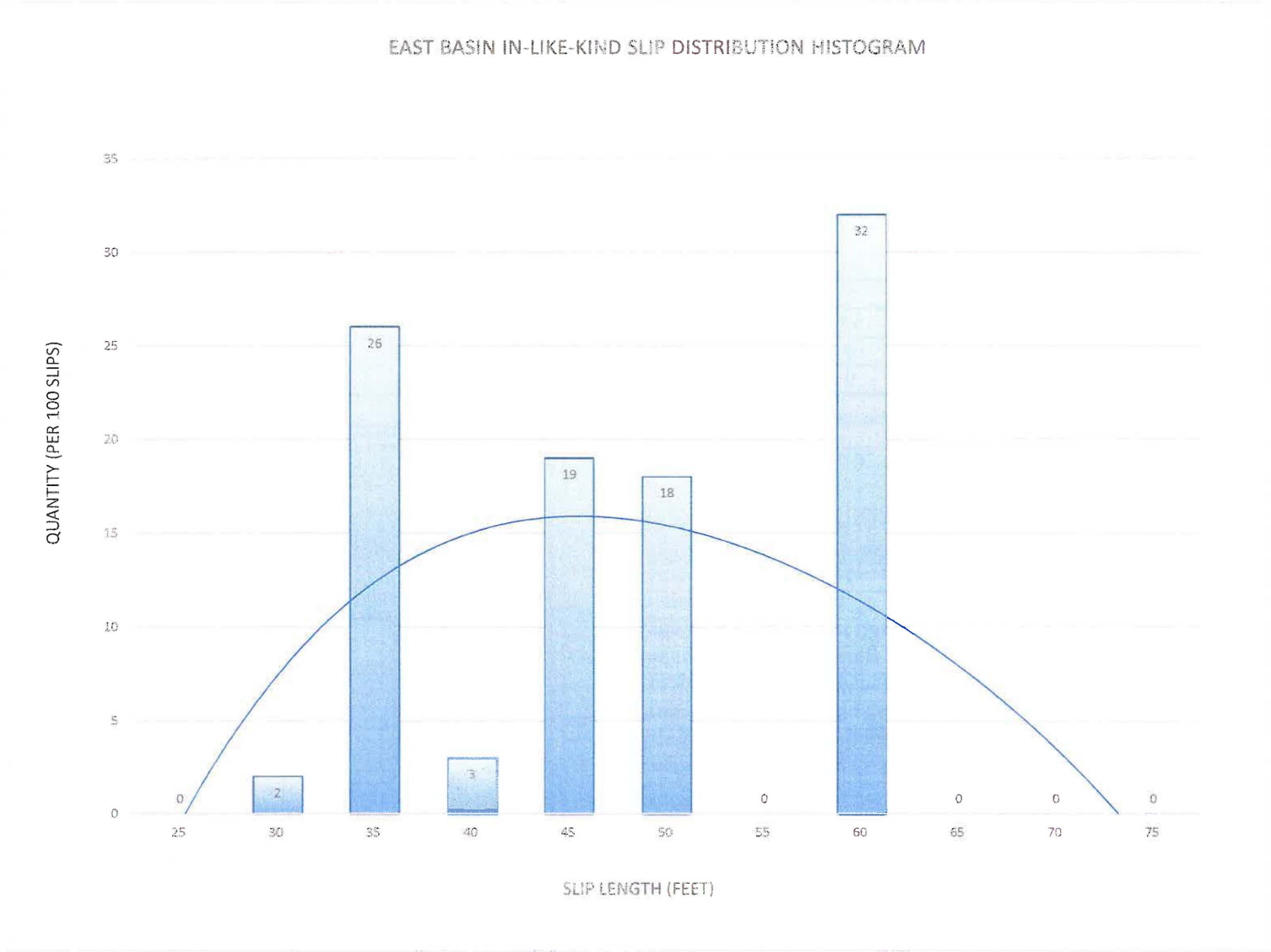
Boat Length (ft)	Quantity	Percent of Total
25	0	0.0%
30	2	2.1%
35	25	26.0%
40	3	3.1%
45	18	18.8%
50	17	17.7%
55	0	0.0%
60	31	32.3%
65	0	0.0%
70	0	0.0%
75	0	0.0%

PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	58

ADA REQUIREMENTS

Minimum Number of ADA Slips:	3
Min. No. of ADA Parking Spaces:	3
No. of Van Spaces of Total ADA:	1


EAST BASIN IN-LIKE-KIND SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
35
30
25
20
15
10
5
0
0
2
26
3
19
18
0
32
0
0
0
25
30
35
40
45
50
55
60
65
70
75
SLIP LENGTH (FEET)

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

for Single Slips

SCENARIO NAME: East Basin 50-Foot Slip Mix

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	49.7 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	27,147
Existing Pile Count (Estimated):	80
Proposed Dock Area (Sq Ft, Simulated):	30,820
Proposed Pile Count (Simulated):	91
Estimated Annual Revenue [1]:	$660,000
Estimated Total Project Cost:	$7,463,000
Simple Payback Period [2]:	11.31 Years
Estimated Annual Maintenance Cost:	$15,164

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	1.88
Parking Space Factor	0.60
Total Area (Acres)	4.76

SLIPS PER ACRE:	18.8
TOTAL SLIPS:	90
LINEAL FEET OF SLIPS PER ACRE:	934
TOTAL LINEAR FEET OF SLIPS:	4465

SLIP MIX DESIGN

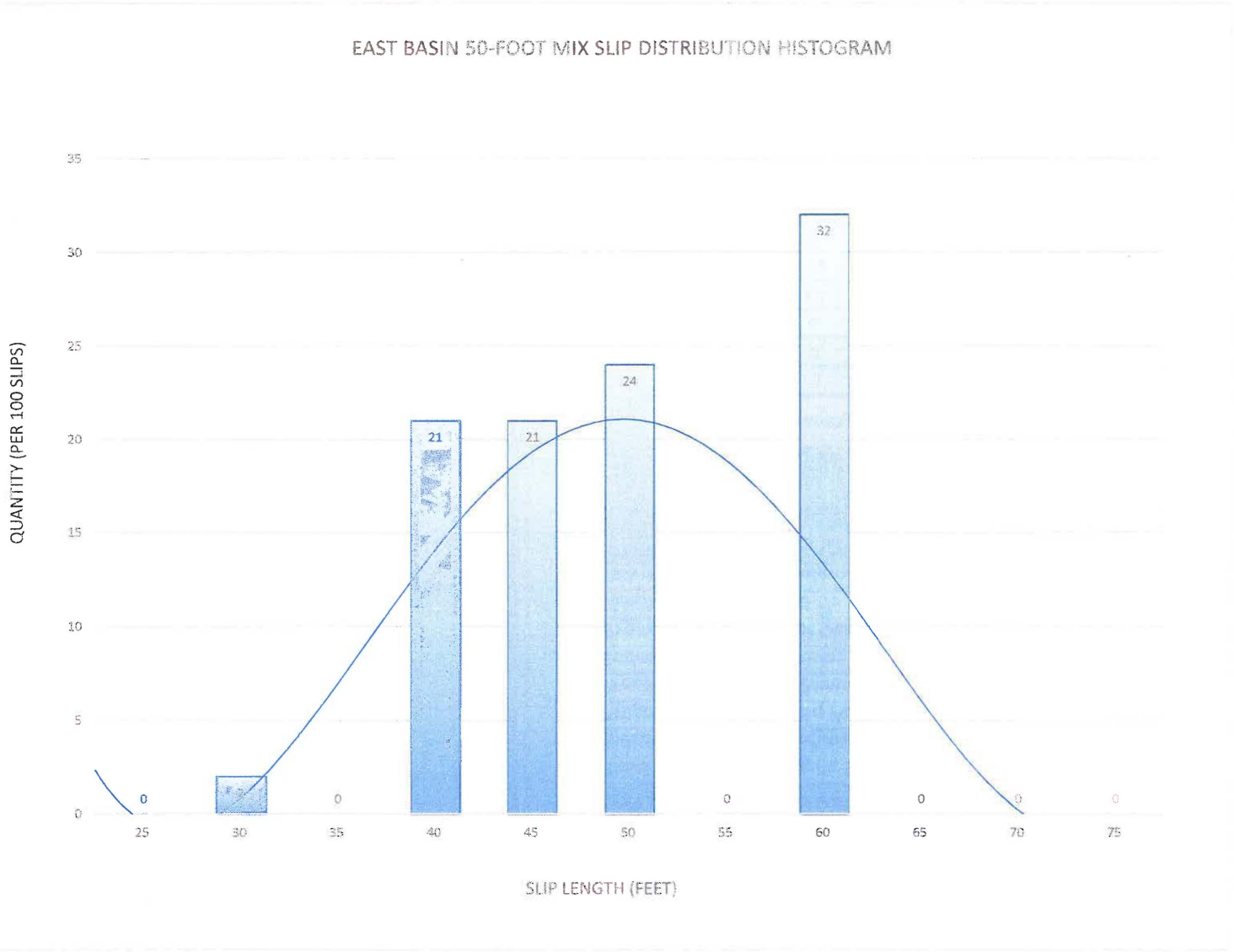
Boat Length (ft)	Quantity	Percent of Total
25	0	0.0%
30	2	2.2%
35	0	0.0%
40	19	21.1%
45	19	21.1%
50	21	23.3%
55	0	0.0%
60	29	32.2%
65	0	0.0%
70	0	0.0%
75	0	0.0%

PARKING REQUIREMENTS

Minimum Number of Parking Spaces:	54

ADA REQUIREMENTS

Minimum Number of ADA Slips:	3
Min. No. of ADA Parking Spaces:	3
No. of Van Spaces of Total ADA:	1


EAST BASIN 50-FOOT MIX SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
35
30
25
20
15
10
5
0
0
0
21
21
24
0
32
0
0
0
25
30
35
40
45
50
55
60
65
70
75
SLIP LENGTH (FEET)

MARINA PLANNING & DEVELOPMENT PROGRAM (MPDP)

Note: Dock and water space dimensions are based on California DBW guidelines and industry standards.

for Single Slips

SCENARIO NAME: East Basin 53-Foot Slip Mix

SELECT THE FOLLOWING : *(Using Dropdown Menus)*	
Distribution Type:	CUSTOM
Average Slip Length:	52.9 ft

CONSTRUCTION AND FINANCIAL METRICS

Existing Dock Area (Sq Ft, Estimated):	27,147
Existing Pile Count (Estimated):	80
Proposed Dock Area (Sq Ft, Simulated):	30,410
Proposed Pile Count (Simulated):	100
Estimated Annual Revenue (1):	$654,000
Estimated Total Project Cost:	$7,463,000
Simple Payback Period (2):	11.41 Years
Estimated Annual Maintenance Cost:	$15,753

(1) Assumes 100% occupancy and no liveaboards.

(2) Excludes cost of money and operations and maintenance costs.

INPUT THE FOLLOWING VALUES:	
Headwalk Width (Feet)	8
Backing Space Factor	1.88
Parking Space Factor	0.60
Total Area (Acres)	4.76

SLIPS PER ACRE:	17.2
TOTAL SLIPS:	81
LINEAL FEET OF SLIPS PER ACRE:	907
TOTAL LINEAR FEET OF SLIPS:	4270

SLIP MIX DESIGN

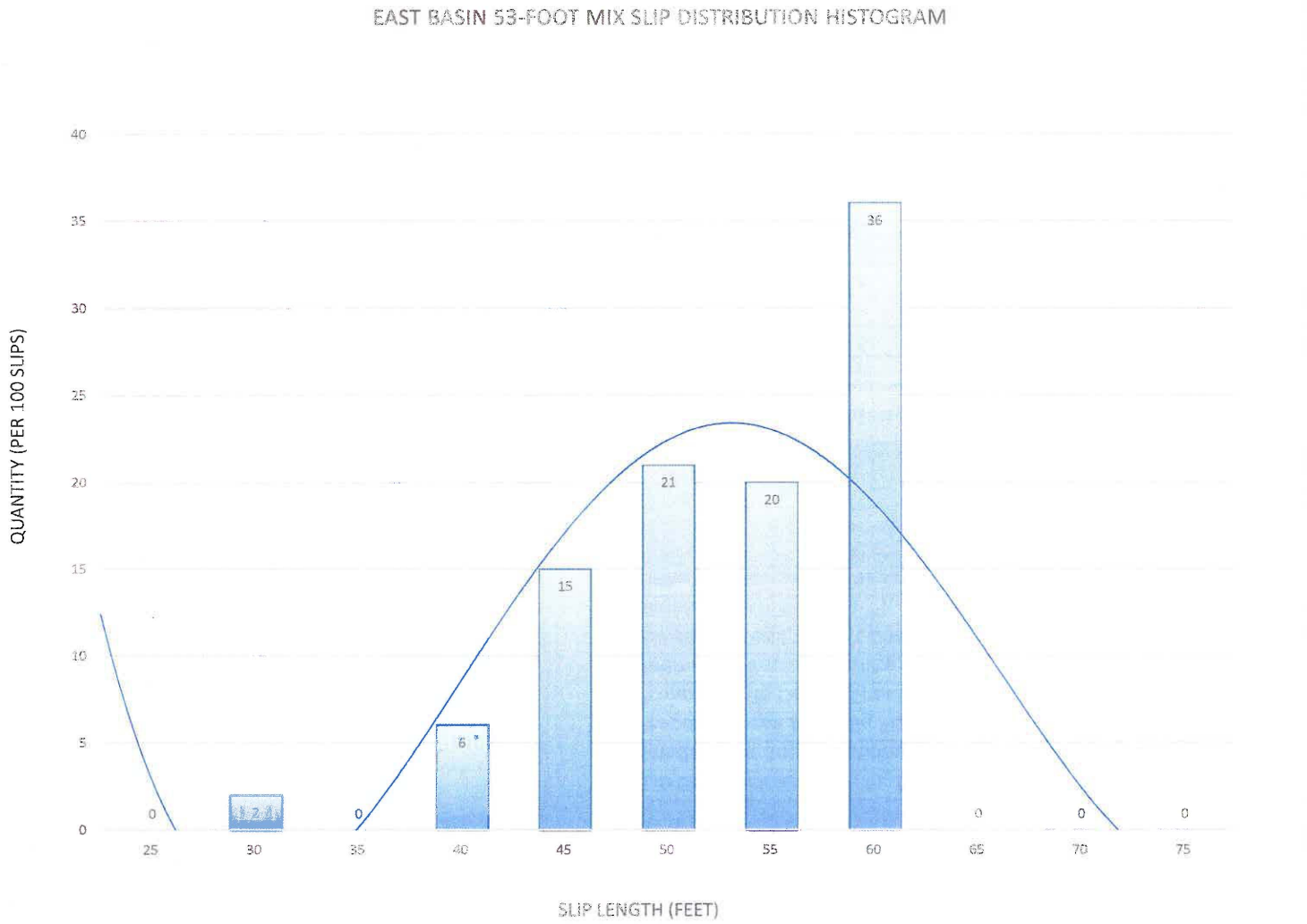
Boat Length (ft)	Quantity	Percent of Total
25	0	0.0%
30	2	2.5%
35	0	0.0%
40	5	6.2%
45	12	14.8%
50	17	21.0%
55	16	19.8%
60	29	35.8%
65	0	0.0%
70	0	0.0%
75	0	0.0%

PARKING REQUIREMENTS

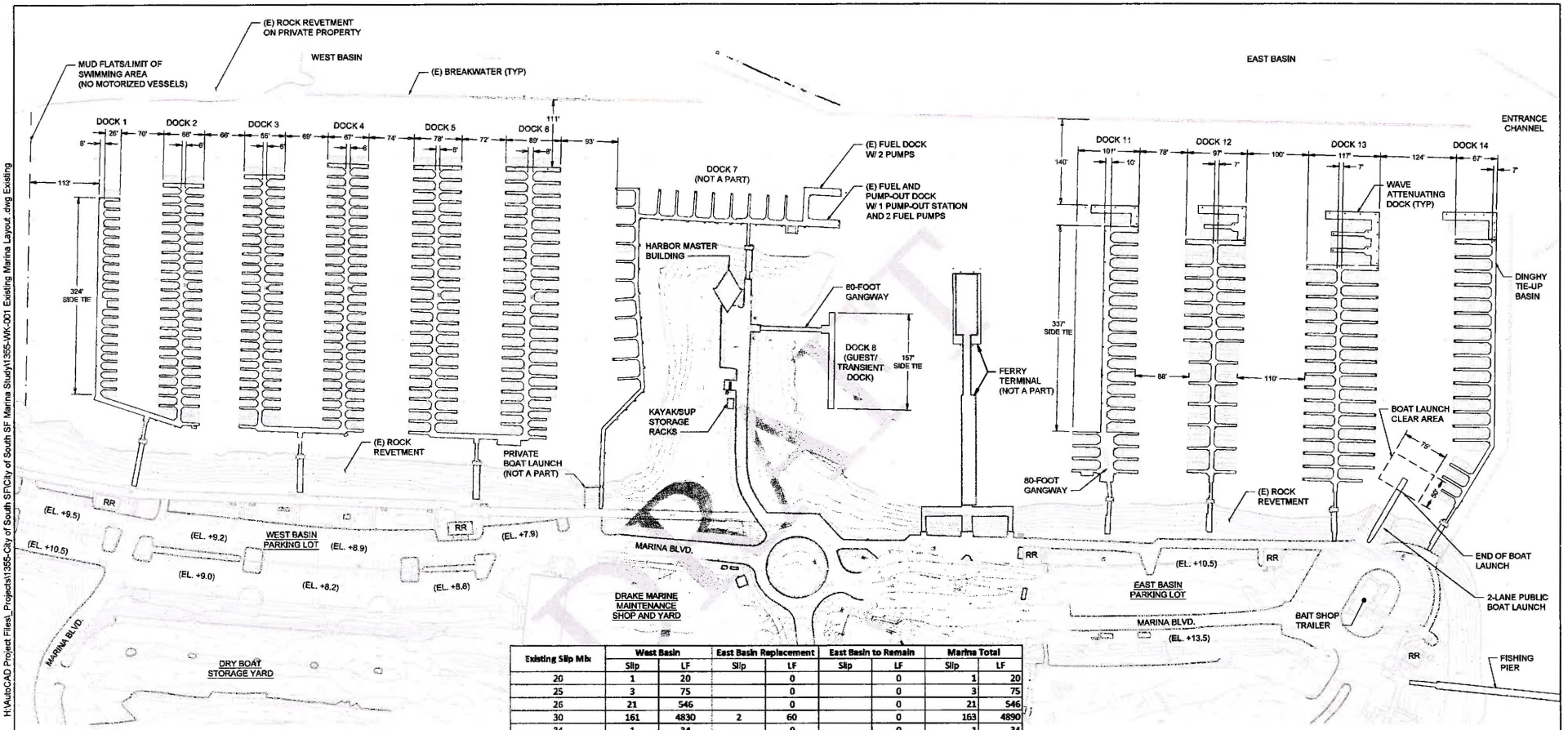
Minimum Number of Parking Spaces:	49

ADA REQUIREMENTS

Minimum Number of ADA Slips:	3
Min. No. of ADA Parking Spaces:	2
No. of Van Spaces of Total ADA:	1


EAST BASIN 53-FOOT MIX SLIP DISTRIBUTION HISTOGRAM
QUANTITY (PER 100 SLIPS)
SLIP LENGTH (FEET)
40
35
30
25
20
15
10
5
0
0
2
0
6
15
21
20
36
0
0
0
25
30
35
40
45
50
55
60
65
70
75

APPENDIX C
EXISTING AND CONCEPTUAL LAYOUTS



Existing Slip Mix	West Basin		East Basin Replacement		East Basin to Remain		Marina Total	
	Slip	LF	Slip	LF	Slip	LF	Slip	LF
20	1	20		0		0	1	20
25	3	75		0		0	3	75
26	21	546		0		0	21	546
30	161	4830	2	60		0	163	4890
34	1	34		0		0	1	34
36	76	2736	24	864		0	100	3600
40	1	40	3	120	3	120	7	280
45	19	855	17	765	19	855	55	2475
50		0	16	800		0	16	800
55		0		0		0	0	0
60		0	29	1740	2	120	31	1860
65		0		0	5	325	5	325
Total	283	9136	91	4349	29	1420	403	14905
Average Slip Length (ft)	32.3		47.8		49.0		37.0	
Dock Area (SF)	61,800		27,147		19,825		108,772	

NOTES:

1. WEST BASIN IS COMPRISED OF DOCKS 1-6, EAST BASIN REPLACEMENT IS COMPRISED OF PORTIONS OF DOCKS 12-14 CONSTRUCTED IN 1980s. EAST BASIN TO REMAIN INCLUDES DOCKS 8 AND 11 AND WAVE ATTENUATING DOCKS AT DOCKS 11-14.
2. SIDE TIE LENGTHS NOT INCLUDED IN TOTAL OR AVERAGE LENGTHS.
3. DOCKS 8 AND 11 CONSTRUCTED IN 2013.
4. WAVE ATTENUATORS AT DOCKS 11-14 CONSTRUCTED IN 2012. NO BERTHING AT END TIES.
5. BOAT LAUNCH CHANNEL MINIMUM WIDTH = 75'.

0 160
Scale in Feet

SOURCE: Background Drawing from Tetra Tech. Prepared using photogrammetric methods.
HORIZONTAL DATUM: California Coordinate System, Zone 3, NAD83
VERTICAL DATUM: North American Vertical Datum 1988, NAVD 88.

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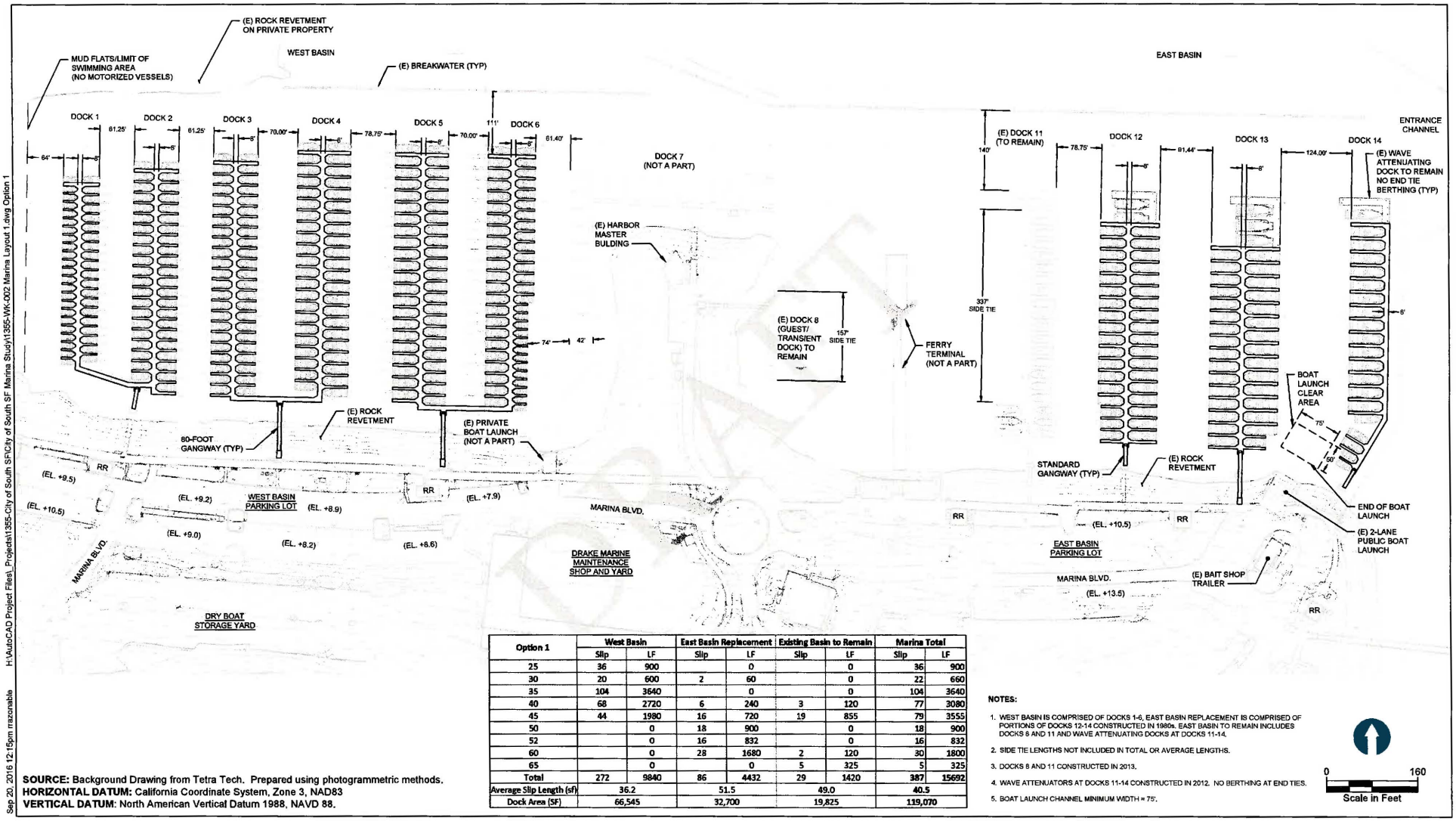
Existing Marina Layout
Oyster Point Marina Study
City of South San Francisco



Option 1	West Basin		East Basin Replacement		Existing Basin to Remain		Marina Total	
	Slip	LF	Slip	LF	Slip	LF	Slip	LF
25	36	900		0		0	36	900
30	20	600	2	60		0	22	660
35	104	3640		0		0	104	3640
40	68	2720	6	240	3	120	77	3080
45	44	1980	16	720	19	855	79	3555
50		0	18	900		0	18	900
52		0	16	832		0	16	832
60		0	28	1680	2	120	30	1800
65		0		0	5	325	5	325
Total	272	9840	86	4432	29	1420	387	15692
Average Slip Length (sf)	36.2		51.5		49.0		40.5	
Dock Area (SF)	66,545		32,700		19,825		119,070	

NOTES:

1. WEST BASIN IS COMPRISED OF DOCKS 1-6, EAST BASIN REPLACEMENT IS COMPRISED OF PORTIONS OF DOCKS 12-14 CONSTRUCTED IN 1980s. EAST BASIN TO REMAIN INCLUDES DOCKS 8 AND 11 AND WAVE ATTENUATING DOCKS AT DOCKS 11-14.
2. SIDE TIE LENGTHS NOT INCLUDED IN TOTAL OR AVERAGE LENGTHS.
3. DOCKS 8 AND 11 CONSTRUCTED IN 2013.
4. WAVE ATTENUATORS AT DOCKS 11-14 CONSTRUCTED IN 2012. NO BERTHING AT END TIES.
5. BOAT LAUNCH CHANNEL MINIMUM WIDTH = 75'.

SOURCE: Background Drawing from Tetra Tech. Prepared using photogrammetric methods.
HORIZONTAL DATUM: California Coordinate System, Zone 3, NAD83
VERTICAL DATUM: North American Vertical Datum 1988, NAVD 88.

0 160
Scale in Feet

Sep 20, 2016 12:15pm rrazonable H:\AutoCAD Project Files_Projects\1355-City of South SF\City of South SF Marina Study\1355-WK-002 Marina Layout 1.dwg Option 1

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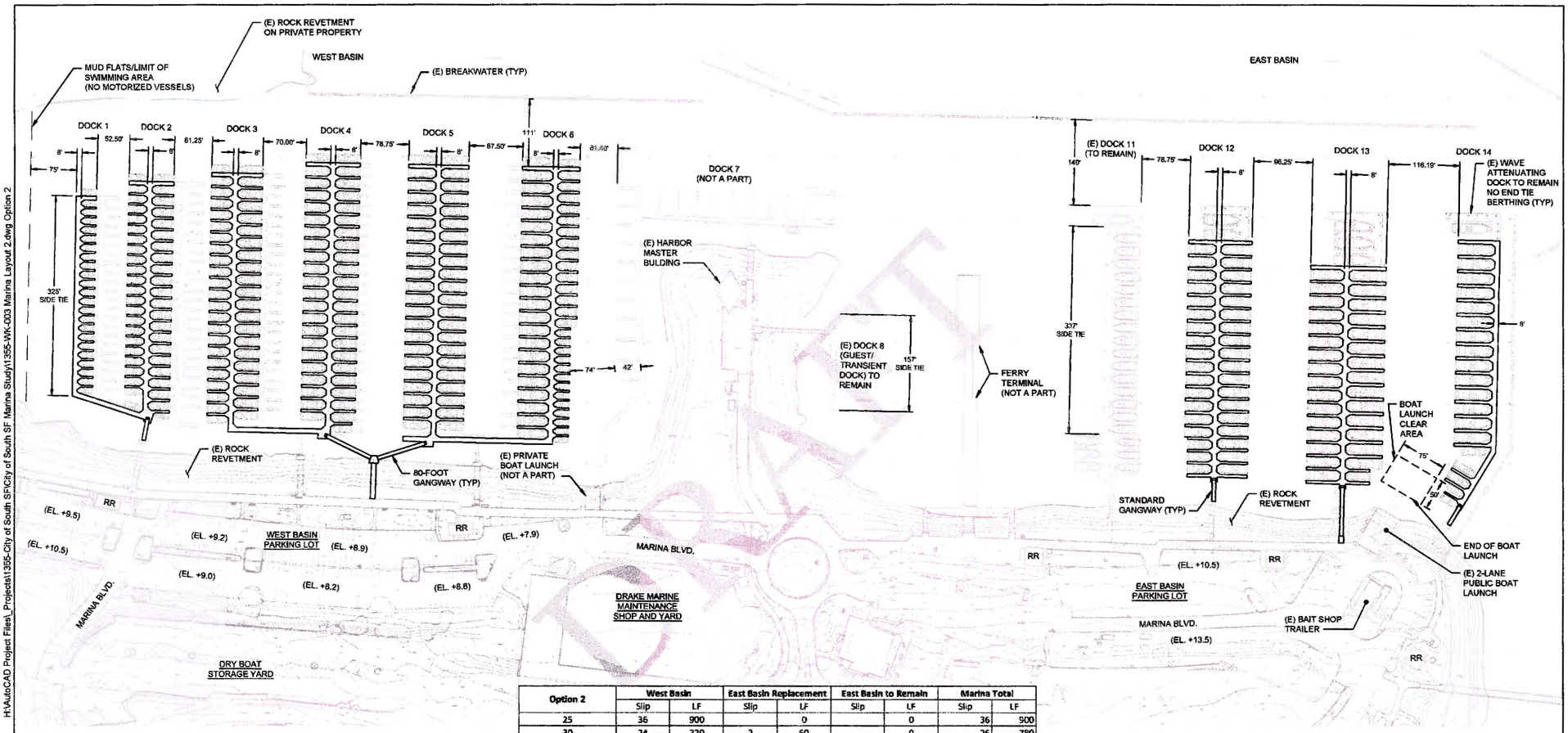
Marina Layout - Option 1
Oyster Point Marina Study
City of South San Francisco



Option 2	West Basin		East Basin Replacement		East Basin to Remain		Marina Total	
	Slip	LF	Slip	LF	Slip	LF	Slip	LF
25	36	900		0		0	36	900
30	24	720	2	60		0	26	780
35	60	2100		0		0	60	2100
40	65	2600	6	240	3	120	74	2960
45	44	1980	16	720	19	855	79	3555
50	22	1100	18	900		0	40	2000
55		0	16	880		0	16	880
60		0	28	1680	2	120	30	1800
65		0		0	5	325	5	325
Total	251	9400	86	4480	29	1420	366	15300
Average Slip Length (ft)	37.5		52.1		49.0		41.8	
Dock Area (SF)	64,766		33,116		19,825		117,707	

NOTES:

1. WEST BASIN IS COMPRISED OF DOCKS 1-6, EAST BASIN REPLACEMENT IS COMPRISED OF PORTIONS OF DOCKS 12-14 CONSTRUCTED IN 1980s. EAST BASIN TO REMAIN INCLUDES DOCKS 8 AND 11 AND WAVE ATTENUATING DOCKS AT DOCKS 11-14.
2. SIDE TIE LENGTHS NOT INCLUDED IN TOTAL OR AVERAGE LENGTHS.
3. DOCKS 8 AND 11 CONSTRUCTED IN 2013.
4. WAVE ATTENUATORS AT DOCKS 11-14 CONSTRUCTED IN 2012. NO BERTHING AT END TIES.
5. BOAT LAUNCH CHANNEL MINIMUM WIDTH = 75'.

SOURCE: Background Drawing from Tetra Tech. Prepared using photogrammetric methods.
HORIZONTAL DATUM: California Coordinate System, Zone 3, NAD83
VERTICAL DATUM: North American Vertical Datum 1988, NAVD 88.

Sep 20, 2016 12:16pm rrazonable H:\AutoCAD Project Files_Projects\1355-City of South SF\City of South SF Marina Study\1355-WK-003 Marina Layout 2.dwg Option 2

ANCHOR QEA

Marina Layout - Option 2
Oyster Point Marina Study
City of South San Francisco

APPENDIX D
ESTIMATES OF MARINA CONSTRUCTION COSTS

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
West Basin - Existing Simulation

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$178,500	
	Water Quality BMPs	0.50%	ls					$44,600	
	Demolition								
	Docks	61800	sf			$12.00	$741,600	$741,600	based on existing dock area
	Guidepiles	148	ea			$3,000.00	$444,000	$444,000	based on existing pile count
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms		ea			$15,000.00			
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	55130	sf			$85.00	$4,686,050	$4,686,050	Concrete Docks
	Guidepiles	84	ea			$9,000.00	$756,000	$756,000	supply and install
	Gangways								
	Standard replacement/s	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			$35,000.00			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	3	ea			$45,000.00	$135,000	$135,000	estimated 1 per 100 slips
	ADA Platform/s		ea			$70,000.00			pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	288	ea			$3,750.00	$1,080,000	$1,080,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd		ea			$4,250.00			power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	6	ea			$20,000.00	$120,000	$120,000	estimated 1 per 30 slips
	Telecomm System	288	ea			$500.00	$144,000	$144,000	cost per boat
	Plumbing per boat, incl fire	288	ea			$1,500.00	$432,000	$432,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials			$	8,923,650
General Contractor OH&P (Percent):	10		$	892,365
Sub-Total			$	10,039,115
Contingency (Percent):	10		$	1,003,912
Construction Total:			**$**	**11,044,000**
Soft Costs:	17.5		$	1,756,845
Grand Total:			**$**	**12,801,000**
Cost per Slip:			$	136,346
Cost per SF Dock:			$	200

Soft costs shown not project specific and do not include cost of money

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
West Basin - Rebuild In-Like-Kind

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$205,500	
	Water Quality BMPs	0.50%	ls					$51,400	
	Demolition								
	Docks	61800	sf			$12.00	$741,600	$741,600	based on **existing dock area**
	Guidepiles	148	ea			$3,000.00	$444,000	$444,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	3	ea			$15,000.00	$45,000	$45,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	63400	sf			$85.00	$5,389,000	$5,389,000	Concrete Docks
	Guidepiles	93	ea			$9,000.00	$837,000	$837,000	supply and install
	Gangways								
	Standard replacement/s	4	ea			$20,000.00	$80,000	$80,000	estimated 1 per 30 slips
	Gangway Abutment/s	4	ea			$35,000.00	$140,000	$140,000	concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	3	ea			$45,000.00	$135,000	$135,000	estimated 1 per 100 slips
	ADA Platform/s	3	ea			$70,000.00	$210,000	$210,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	332	ea			$3,750.00	$1,245,000	$1,245,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd		ea			$4,250.00			power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	1	ea			$20,000.00	$20,000	$20,000	estimated 1 per 30 slips
	Telecomm System	332	ea			$500.00	$166,000	$166,000	cost per boat
	Plumbing per boat, incl fire	332	ea			$1,500.00	$498,000	$498,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	10,275,600	
General Contractor OH&P (Percent):	10	$	1,027,560	
Sub-Total		$	11,560,060	
Contingency (Percent):	10	$	1,156,006	
Construction Total:		$	**12,717,000**	
Soft Costs:	17.5	$	2,023,011	Soft costs shown not project specific and do not include cost of money
Grand Total:		$	**14,741,000**	
Cost per Slip:		$	157,000	
Cost per SF Dock:		$	201	

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
West Basin - 36-Foot Market Mix

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$196,500	
	Water Quality BMPs	0.50%	ls					$49,100	
	Demolition								
	Docks	61800	sf			$12.00	$741,600	$741,600	based on existing dock area
	Guidepiles	148	ea			$3,000.00	$444,000	$444,000	based on existing pile count
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	3	ea			$15,000.00	$45,000	$45,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	61230	sf			$85.00	$5,204,550	$5,204,550	Concrete Docks
	Guidepiles	93	ea			$9,000.00	$837,000	$837,000	supply and install
	Gangways								
	Standard replacement/s	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Gangway Abutment/s	3	ea			$35,000.00	$105,000	$105,000	concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	3	ea			$45,000.00	$135,000	$135,000	estimated 1 per 100 slips
	ADA Platform/s	3	ea			$70,000.00	$210,000	$210,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	278	ea			$3,750.00	$1,042,500	$1,042,500	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd		ea			$4,250.00			power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	6	ea			$20,000.00	$120,000	$120,000	estimated 1 per 30 slips
	Telecomm System	278	ea			$500.00	$139,000	$139,000	cost per boat
	Plumbing per boat, incl fire	278	ea			$1,500.00	$417,000	$417,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	9,825,650	
General Contractor OH&P (Percent):	10	$	982,565	
Sub-Total		$	11,053,815	
Contingency (Percent):	10	$	1,105,382	
Construction Total:		**$**	**12,160,000**	
Soft Costs:	17.5	$	1,934,418	Soft costs shown not project specific and do not include cost of money
Grand Total:		**$**	**14,095,000**	
Cost per Slip:		$	150,123	
Cost per SF Dock:		$	199	

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
West Basin - 38-Foot Market Mix

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$191,700	
	Water Quality BMPs	0.50%	ls					$47,900	
	Demolition								
	Docks	61800	sf			$12.00	$741,600	$741,600	based on existing dock area
	Guidepiles	148	ea			$3,000.00	$444,000	$444,000	based on existing pile count
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	3	ea			$15,000.00	$45,000	$45,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	60220	sf			$85.00	$5,118,700	$5,118,700	Concrete Docks
	Guidepiles	109	ea			$9,000.00	$981,000	$981,000	supply and install
	Gangways								
	Standard replacement/s	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Gangway Abutment/s	3	ea			$35,000.00	$105,000	$105,000	concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	2	ea			$45,000.00	$90,000	$90,000	estimated 1 per 100 slips
	ADA Platform/s	2	ea			$70,000.00	$140,000	$140,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	226	ea			$3,750.00	$847,500	$847,500	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	22	ea			$4,250.00	$93,500	$93,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	5	ea			$20,000.00	$100,000	$100,000	estimated 1 per 30 slips
	Telecomm System	248	ea			$500.00	$124,000	$124,000	cost per boat
	Plumbing per boat, incl fire	248	ea			$1,500.00	$372,000	$372,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	9,587,300
General Contractor OH&P (Percent):	10	$	958,730
Sub-Total		$	10,785,630
Contingency (Percent):	10	$	1,078,563
Construction Total:		**$**	**11,865,000**
Soft Costs:	17.5	$	1,887,485
Grand Total:		**$**	**13,753,000**
Cost per Slip:		$	146,481
Cost per SF Dock:		$	197

Soft costs shown not project specific and do not include cost of money

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
West Basin - Layout Option 1

Job No.: 151355-01.01
Phase : Concept
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$199,400	
	Water Quality BMPs	0.50%	ls					$49,800	
	Demolition								
	Docks	61800	sf			$12.00	$741,600	$741,600	based on **existing dock area**
	Guidepiles	148	ea			$3,000.00	$444,000	$444,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	2	ea			$15,000.00	$30,000	$30,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	66545	sf			$85.00	$5,656,325	$5,656,325	Concrete Docks
	Guidepiles	93	ea			$9,000.00	$837,000	$837,000	supply and install
	Gangways								
	Standard replacement/s	1	ea			$20,000.00	$20,000	$20,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			$35,000.00			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	2	ea			$45,000.00	$90,000	$90,000	estimated 1 per 100 slips
	ADA Platform/s	2	ea			$70,000.00	$140,000	$140,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	272	ea			$3,750.00	$1,020,000	$1,020,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd		ea			$4,250.00			power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	6	ea			$20,000.00	$120,000	$120,000	estimated 1 per 30 slips
	Telecomm System	272	ea			$500.00	$136,000	$136,000	cost per boat
	Plumbing per boat, incl fire	272	ea			$1,500.00	$408,000	$408,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	9,967,925	
General Contractor OH&P (Percent):	10	$	996,793	
Sub-Total		$	11,213,918	
Contingency (Percent):	10	$	1,121,392	
Construction Total:		**$**	**12,336,000**	
Soft Costs:	17.5	$	1,962,436	Soft costs shown not project specific and do not include cost of money
Grand Total:		**$**	**14,299,000**	
Cost per Slip:		$	152,296	
Cost per SF Dock:		$	185	

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
West Basin - Layout Option 2

Job No.: 151355-01.01
Phase : Concept
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$195,600	
	Water Quality BMPs	0.50%	ls					$48,900	
	Demolition								
	Docks	61800	sf			$12.00	$741,600	$741,600	based on **existing dock area**
	Guidepiles	148	ea			$3,000.00	$444,000	$444,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	2	ea			$15,000.00	$30,000	$30,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	64766	sf			$85.00	$5,505,110	$5,505,110	Concrete Docks
	Guidepiles	109	ea			$9,000.00	$981,000	$981,000	supply and install
	Gangways								
	Standard replacement/s	1	ea			$20,000.00	$20,000	$20,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			$35,000.00			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	2	ea			$45,000.00	$90,000	$90,000	estimated 1 per 100 slips
	ADA Platform/s	1	ea			$70,000.00	$70,000	$70,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	229	ea			$3,750.00	$858,750	$858,750	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	22	ea			$4,250.00	$93,500	$93,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	6	ea			$20,000.00	$120,000	$120,000	estimated 1 per 30 slips
	Telecomm System	251	ea			$500.00	$125,500	$125,500	cost per boat
	Plumbing per boat, incl fire	251	ea			$1,500.00	$376,500	$376,500	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	9,780,960
General Contractor OH&P (Percent):	10	$	978,096
Sub-Total		$	11,003,556
Contingency (Percent):	10	$	1,100,356
Construction Total:		$	**12,104,000**
Soft Costs:	17.5	$	1,925,622
Grand Total:		$	**14,030,000**
Cost per Slip:		$	149,432
Cost per SF Dock:		$	187

Soft costs shown not project specific and do not include cost of money

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
East Basin - Existing Simulation

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$98,800	
	Water Quality BMPs	0.50%	ls					$24,700	
	Demolition								
	Docks	27147	sf			$12.00	$325,764	$325,764	based on existing dock area
	Guidepiles	80	ea			$3,000.00	$240,000	$240,000	based on existing pile count
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms		ea			$15,000.00			
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	29730	sf			$85.00	$2,527,050	$2,527,050	Concrete Docks
	Guidepiles	91	ea			$9,000.00	$819,000	$819,000	supply and install
	Gangways								
	Standard replacement/s	2	ea			$20,000.00	$40,000	$40,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			$35,000.00			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	1	ea			$45,000.00	$45,000	$45,000	estimated 1 per 100 slips
	ADA Platform/s		ea			$70,000.00			pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	47	ea			$3,750.00	$176,250	$176,250	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	46	ea			$4,250.00	$195,500	$195,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Telecomm System	93	ea			$500.00	$46,500	$46,500	cost per boat
	Plumbing per boat, incl fire	93	ea			$1,500.00	$139,500	$139,500	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	4,939,564	
General Contractor OH&P (Percent):	10	$	493,956	
Sub-Total		$	5,557,020	
Contingency (Percent):	10	$	555,702	
Construction Total:		**$**	**6,113,000**	
Soft Costs:	17.5	$	972,479	Soft costs shown not project specific and do not include cost of money
Grand Total:		**$**	**7,086,000**	
Cost per Slip:		$	75,469	
Cost per SF Dock:		$	206	

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
East Basin - Rebuild In-Like-Kind

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$99,400	
	Water Quality BMPs	0.50%	ls					$24,800	
	Demolition								
	Docks	27147	sf			$12.00	$325,764	$325,764	based on **existing dock area**
	Guidepiles	80	ea			$3,000.00	$240,000	$240,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms		ea			$15,000.00			
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	30610	sf			$85.00	$2,601,850	$2,601,850	Concrete Docks
	Guidepiles	91	ea			$9,000.00	$819,000	$819,000	supply and install
	Gangways								
	Standard replacement/s	1	ea			$20,000.00	$20,000	$20,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			$35,000.00			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s		ea			$45,000.00			estimated 1 per 100 slips
	ADA Platform/s		ea			$70,000.00			pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	48	ea			$3,750.00	$180,000	$180,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	48	ea			$4,250.00	$204,000	$204,000	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Telecomm System	96	ea			$500.00	$48,000	$48,000	cost per boat
	Plumbing per boat, incl fire	96	ea			$1,500.00	$144,000	$144,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	4,967,614
General Contractor OH&P (Percent):	10	$	496,761
Sub-Total		$	5,588,575
Contingency (Percent):	10	$	558,858
Construction Total:		$	**6,148,000**
Soft Costs:	17.5	$	978,001
Grand Total:		$	**7,127,000**
Cost per Slip:		$	75,901
Cost per SF Dock:		$	201

Soft costs shown not project specific and do not include cost of money

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
East Basin - 50-Foot Market Mix

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$104,000	
	Water Quality BMPs	0.50%	ls					$26,000	
	Demolition								
	Docks	27147	sf			$12.00	$325,764	$325,764	based on **existing dock area**
	Guidepiles	80	ea			$3,000.00	$240,000	$240,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	3	ea			$15,000.00	$45,000	$45,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	30820	sf			$85.00	$2,619,700	$2,619,700	Concrete Docks
	Guidepiles	91	ea			$9,000.00	$819,000	$819,000	supply and install
	Gangways								
	Standard replacement/s	2	ea			$20,000.00	$40,000	$40,000	estimated 1 per 30 slips
	Gangway Abutment/s	2	ea			$35,000.00	$70,000	$70,000	concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	1	ea			$45,000.00	$45,000	$45,000	estimated 1 per 100 slips
	ADA Platform/s	1	ea			$70,000.00	$70,000	$70,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	40	ea			$3,750.00	$150,000	$150,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	50	ea			$4,250.00	$212,500	$212,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Telecomm System	90	ea			$500.00	$45,000	$45,000	cost per boat
	Plumbing per boat, incl fire	90	ea			$1,500.00	$135,000	$135,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	5,201,964	
General Contractor OH&P (Percent):	10	$	520,196	
Sub-Total		$	5,852,160	
Contingency (Percent):	10	$	585,216	
Construction Total:		**$**	**6,438,000**	
Soft Costs:	17.5	$	1,024,128	Soft costs shown not project specific and do not include cost of money
Grand Total:		**$**	**7,463,000**	
Cost per Slip:		$	79,481	
Cost per SF Dock:		$	209	

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
East Basin - 53-Foot Market Mix

Job No.: 151355-01.01
Phase : Study
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$104,000	
	Water Quality BMPs	0.50%	ls					$26,000	
	Demolition								
	Docks	27147	sf			$12.00	$325,764	$325,764	based on **existing dock area**
	Guidepiles	80	ea			$3,000.00	$240,000	$240,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	3	ea			$15,000.00	$45,000	$45,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	30410	sf			$85.00	$2,584,850	$2,584,850	Concrete Docks
	Guidepiles	100	ea			$9,000.00	$900,000	$900,000	supply and install
	Gangways								
	Standard replacement/s	2	ea			$20,000.00	$40,000	$40,000	estimated 1 per 30 slips
	Gangway Abutment/s	2	ea			$35,000.00	$70,000	$70,000	concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	1	ea			$45,000.00	$45,000	$45,000	estimated 1 per 100 slips
	ADA Platform/s	1	ea			$70,000.00	$70,000	$70,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	19	ea			$3,750.00	$71,250	$71,250	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	62	ea			$4,250.00	$263,500	$263,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Telecomm System	81	ea			$500.00	$40,500	$40,500	cost per boat
	Plumbing per boat, incl fire	81	ea			$1,500.00	$121,500	$121,500	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	5,202,364	
General Contractor OH&P (Percent):	10	$	520,236	
Sub-Total		$	5,852,600	
Contingency (Percent):	10	$	585,260	
Construction Total:		**$**	**6,438,000**	
Soft Costs:	17.5	$	1,024,205	Soft costs shown not project specific and do not include cost of money
Grand Total:		**$**	**7,463,000**	
Cost per Slip:		$	79,481	
Cost per SF Dock:		$	212	

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
East Basin - Layout Option 1

Job No.: 151355-01.01
Phase : Concept
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$106,500	
	Water Quality BMPs	0.50%	ls					$26,600	
	Demolition								
	Docks	27147	sf			**$12.00**	$325,764	$325,764	based on **existing dock area**
	Guidepiles	80	ea			**$3,000.00**	$240,000	$240,000	based on **existing pile count**
	Gangways	3	ea			**$5,000.00**	$15,000	$15,000	
	Gangway Platforms	1	ea			**$15,000.00**	$15,000	$15,000	
	Infrastructure	1	ls			**$50,000.00**	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	32700	sf			**$85.00**	$2,779,500	$2,779,500	Concrete Docks
	Guidepiles	100	ea			**$9,000.00**	$900,000	$900,000	supply and install
	Gangways								
	Standard replacement/s	2	ea			**$20,000.00**	$40,000	$40,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			**$35,000.00**			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	1	ea			**$45,000.00**	$45,000	$45,000	estimated 1 per 100 slips
	ADA Platform/s	1	ea			**$70,000.00**	$70,000	$70,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	24	ea			**$3,750.00**	$90,000	$90,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	62	ea			**$4,250.00**	$263,500	$263,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			**$5,000.00**			necessary for vessels over 75 feet
	Transformers	3	ea			**$20,000.00**	$60,000	$60,000	estimated 1 per 30 slips
	Telecomm System	86	ea			**$500.00**	$43,000	$43,000	cost per boat
	Plumbing per boat, incl fire	86	ea			**$1,500.00**	$129,000	$129,000	cost per boat
	Pumpout Facility		ea			**$50,000.00**			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			**$500.00**			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			**$35,000.00**	$35,000	$35,000	
	Wet Utilities	1	ls			**$145,000.00**	$145,000	$145,000	
	Electrical	1	ls			**$80,000.00**	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	5,325,764
General Contractor OH&P (Percent):	10	$	532,576
Sub-Total		$	5,991,440
Contingency (Percent):	10	$	599,144
Construction Total:		**$**	**6,591,000**
Soft Costs:	17.5	$	1,048,502
Grand Total:		**$**	**7,640,000**
Cost per Slip:		$	81,370
Cost per SF Dock:		$	202

Soft costs shown not project specific and do not include cost of money

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

ANCHOR QEA, LLC

ESTIMATE OF PROBABLE CONSTRUCTION COST

Client: CITY OF SOUTH SAN FRANCISCO
Project: OYSTER POINT MARINA
East Basin - Layout Option 2

Job No.: 151355-01.01
Phase : Concept
File :

Prepared By: fjm
Checked By : rhm
Date : 9/30/2016

Div	Description	Qty	Units	Unit	Amount	Subcontract Cost Unit	Subcontract Cost Amount	TOTAL	Notes
	General Requirements								
	Mobilization/ Demobilization	2.0%	ls					$107,200	
	Water Quality BMPs	0.50%	ls					$26,800	
	Demolition								
	Docks	27147	sf			$12.00	$325,764	$325,764	based on **existing dock area**
	Guidepiles	80	ea			$3,000.00	$240,000	$240,000	based on **existing pile count**
	Gangways	3	ea			$5,000.00	$15,000	$15,000	
	Gangway Platforms	1	ea			$15,000.00	$15,000	$15,000	
	Infrastructure	1	ls			$50,000.00	$50,000	$50,000	
	New Docks & Accessories								
	Fingers & Headwalks	33116	sf			$85.00	$2,814,860	$2,814,860	Concrete Docks
	Guidepiles	100	ea			$9,000.00	$900,000	$900,000	supply and install
	Gangways								
	Standard replacement/s	2	ea			$20,000.00	$40,000	$40,000	estimated 1 per 30 slips
	Gangway Abutment/s		ea			$35,000.00			concrete abutment reconstruction; estimated 1 per gangway
	ADA Gangway/s	1	ea			$45,000.00	$45,000	$45,000	estimated 1 per 100 slips
	ADA Platform/s	1	ea			$70,000.00	$70,000	$70,000	pile-supported concrete platform (8ft x 10ft); estimated 1 per ADA gangway
	Dock Utilities								
	Electrical per boat, std pc	24	ea			$3,750.00	$90,000	$90,000	power centers in dock boxes (typical for boats under 50 feet)
	Electrical per boat, std pd	62	ea			$4,250.00	$263,500	$263,500	power pedestals (typical for boats 50 to 75 feet)
	Electrical per boat, heavy		ea			$5,000.00			necessary for vessels over 75 feet
	Transformers	3	ea			$20,000.00	$60,000	$60,000	estimated 1 per 30 slips
	Telecomm System	86	ea			$500.00	$43,000	$43,000	cost per boat
	Plumbing per boat, incl fire	86	ea			$1,500.00	$129,000	$129,000	cost per boat
	Pumpout Facility		ea			$50,000.00			equipment plus piping on docks; estimated 1 per 400 slips
	In-Slip Pump-Out (Optional)		ea			$500.00			cost per boat
	Landside Allowances								
	Fencing, Gates, and Security	1	ls			$35,000.00	$35,000	$35,000	
	Wet Utilities	1	ls			$145,000.00	$145,000	$145,000	
	Electrical	1	ls			$80,000.00	$80,000	$80,000	
	Parking Lot Upgrades		ls						
	Restrooms		ls						

Sub-Total Labor & Materials		$	5,361,124
General Contractor OH&P (Percent):	10	$	536,112
Sub-Total		$	6,031,236
Contingency (Percent):	10	$	603,124
Construction Total:		**$**	**6,635,000**
Soft Costs:	17.5	$	1,055,466
Grand Total:		**$**	**7,691,000**
Cost per Slip:		$	81,914
Cost per SF Dock:		$	200

Soft costs shown not project specific and do not include cost of money

Costing Basis:

1. 4th quarter of 2016 pricing
2. Actual bids could range between 10% lower or higher than estimate, based on construction industry conditions at the time of bidding.
3. Soft Costs: (% of ConstrCost)
   Permits (1% to 2%)
   PR/Legal (1% to 2%)
   Construction Services (4% to 6%)
   Inspections/Testing (1% to 2%)
   Design (6% to 10%)

Mouasher, Diana

om: John Moren <jmoren@smharbor.com>
ent: Wednesday, November 23, 2016 12:31 PM
To: Lee, Marian
Cc: Steve McGrath
Subject: FW: Contact information for Anchor QEA
Attachments: Marina_Condition_Survey_OPM_2014.pdf; OPM Occupancy Report 11.21.16.pdf; 2016 _Marina_Survey_Final.xlsx; 40' Survey.pdf; OPM Pre-Dredge Survey 8.26.16.pdf; Berth Dimension norm.pdf; Audit of OPM Actual Slip Number 9.5.16.docx

Hi Marian,

Thank you for the opportunity to meet with you and the subsequent teleconference with your consultant Anchor. See below and attached which was my response to Richard Lee's request for further information to possibly help Anchor refine their Analysis Report if they felt inclined to do so. Please know that I did not intentionally leave you out of the loop and would never contact an SSF consultant without direction from SSF. I know you are very busy and am confident that Mr. Lee would "filter" for you in a final meeting report. Today Steve mentioned he had spoken to you and suggested I copy you now.

Please let me know if you have any questions.

I hope you and your family have a great Thanksgiving Holiday weekend.

:st Regards,

John Moren, CMM
Director of Operations
San Mateo County Harbor District
504 Ave Alhambra, El Granada, Ca. 94018
Tel: (650) 741-9163
jmoren@smharbor.com

From: John Moren
Sent: Tuesday, November 22, 2016 4:22 PM
To: 'Josh Burnam'; Lee, Richard
Subject: RE: Contact information for Anchor QEA

Hello Josh, et al,

It was very nice speaking with you yesterday. As I mentioned in our teleconference, I believe the Condition Assessment Anchor conducted to be very professionally done overall and agree with the SWOT Analysis. However, we understood the report to be in draft form and open for potential update prior to finalization. As you may be aware, the San Mateo County Harbor District has undergone significant recent management changes with a new GM starting just last year in November, I just came on board in August of this year. I feel fortunate to have interacted with many very good marina anagers throughout the world, none more professional than our current General Manager Steve McGrath. Therefore, I was happy to see that the SWOT Analysis did not specifically point to poor management as a Weakness. I understand that the report was started some time ago and your staff did not have the most recent and accurate data, no fault of yours.

The report does imply that the OPM is underperforming, which is arguable. I have attached the occupancy report which I asked staff to run yesterday. Your report references the 2014 Condition Survey conducted by Moffat and Nichol, which shows the total slip number to be 390. This 2014 Condition Survey was done after the installation of the Ferry Terminal and reflects the lost berthing with its installation. As you can see from attached, yesterday's occupancy report, occupied slip count of 329, which would reflect a 84% current occupancy level. A confirmed count by the OPM Harbormaster came up with 408, 18 more than Moffat and Nichol indicated, see attached. This reflects an 81% occupancy level. I understand that an exact occupancy level was not your main focus, however, since this report is in draft form, we would like you to consider reflecting the most accurate data in the final if possible. Again, I don't want you to think I am claiming you did not do due diligence, as even our website is incorrect since we are in the process of updating a concurrent site with Streamline Media. We acknowledge room for occupancy improvement, as your report does indicate, and we agree that some slip dimension reconfiguration, elimination of smaller berths, could help occupancy levels increase. I would argue a target occupancy level for OPM long term tenants should be closer to 90%, as OPM's location simply does not allow for as much transient demand as marinas located along recreational travel routes.

As discussed, I have also attached the 2016 Bay Area Marina Survey (which also has the OPM occupancy level incorrect). This survey is helpful to show that our current fee schedule is not necessarily "off base." As you can see, OPM rates are currently higher than true competitive marinas (I would question naming South Beach, in the heart of San Francisco with a 100% occupancy, adjacent to AT&T Park, as one of OPM's 4 competitive marinas), location obviously plays a huge role. The significant planned development in the OPM area may increase demand, but I would be hesitant to promise/suggest rates could be significantly increased even with a complete renovation, again location is a key component in marina occupancy. OPM's location in the San Bruno Gap causes significant challenges with strong afternoon winds which further hampers demand. However, OPM is better protected than some other local marinas, so provides a calmer harbor while vessels are in their slip. The SMC Harbor District has already moved to increase rates incrementally for our most recently renovated docks and would do likewise as we renovate more docks. However, even though our newly renovated docks have a wait list, we have received significant push-back from stakeholders who disagree with our conclusions. As I am sure you will agree, rate fee increases are always difficult and when initially implemented can result in a dip in occupancy. Therefore, a strategic incremental increase works well and allows time for demand confirmation.

I have attached the most recent bathometric survey which we had done in August. OPM currently has -6' to -12' depth with the exception of a couple high spots, probably missed in last dredge episode or caused by prop wash. I also attached a DBW "Best Practices" marina berth/depth/fairway dimension sheet commonly referred to in new marina design. Marina recommended depths vary due to size and type vessel use. Ideally, vessels should have 2' below their keel at berth and recommended depth of -6' for up to 45' vessels. From my experience diving in marinas, bottom density further complicates accurate sonar readings. Marinas often have a first layer of silt so fine you can't feel it with touch, which doesn't register on sonar. Then as you go deeper, the silt becomes of milkshake consistency, which still can't be felt by a moving vessel keel, but is registered by sonar. Lastly is a thicker mud, which nobody likes, but still won't harm a vessel's keel. I would argue that the vast majority of OPM recreational vessels, including larger 50' modern bulbed wing keel sailboats have 6.5' draft or less. Power boats have less draft, Hatteras 70' only has a 5' draft. Our current maint dredge permit, which you confirmed you have a copy of, allows a dredge episode with target depth of -8' +2' with disposal at Alcatraz. However, with the current uncertainty I don't think it realistic to mobilize a dredge episode within the next year, nor mandatory based on current depths. Your report appears to calculate dollar amount for a target depth of -10' throughout the marina. You may consider revising this to -10' only at the locations you are suggesting we put 50'+ vessels and -8' for the remaining. Based on the accumulation levels since the last dredge episode, OPM does not have a high rate of sediment accumulation. Our plan might be a dredge episode and 10 yr maint dredge permit for the entire marina when conducting CEQA review and permitting for the next new dock installation, bringing the entire marina to -8' +1' and -10' +1' at entrance channel and docks where we plan to have larger berths. Moving boats within the marina as the dredge episode takes place to maintain occupancy during the dredge episode.

Best Regards,

John Moren, CMM
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San Mateo County Harbor District
504 Ave Alhambra, El Granada, Ca. 94018
: (650) 741-9163
...oren@smharbor.com

From: Lee, Richard [mailto:Richard.Lee@ssf.net]
Sent: Monday, November 21, 2016 3:53 PM
To: 'jmoren@smharbor.com' <jmoren@smharbor.com>; 'Glenn Lazof' <glazof@smharbor.com>
Cc: Josh Burnam <jburnam@anchorqea.com>
Subject: Contact information for Anchor QEA

Hi John,

The contact information for Josh Burnam, copied above, is below for your information. As discussed during today's conference call, please provide the bathymetric survey data and 2016 Harbormaster Survey to Anchor QEA to further refine the information that is available to them.

Joshua Burnam, MPH, D.Env.
Principal Environmental Planner

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Thanks,

Richard Lee
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SECTION B
WATER AREAS

B1. General

B1.1 The design depths and widths of various water areas within a recreational boat marina must take into consideration the sizes and types of boats expected to use the marina, wave action, currents, water level fluctuations, levels of seasonal boat traffic, silt deposition rates and anticipated frequencies of dredging in order to maintain the minimum design depths over projected dredging intervals, usually measured in years. Recommended design depths are exclusive of site-specific requirements for additional depths necessary to store estimated silt accretion that occurs between scheduled dredging intervals.

B2. Channel Design Criteria

B2.1 Design depths for a specific marina must be based on a design low water elevation established on the basis of a low water datum for the area or reliable long-term extreme low water data obtained from federal, state and local water authorities. Such information should include low tide levels, lowest recorded water depths, etc., in salt water or fresh water locations as required.

B2.2 Required minimum depths below design low water must be objectively determined on the basis of the type (power or sail), length and draft of the boats expected to be berthed in a marina, or specific sections within a larger marina.

The table below provides minimum water depths below design low water, but does not address additional depths that may be necessary for silt deposition storage between periodic dredging operations.

Table B - 1 Minimum Channel Widths and Depths

Channels: ➜	Entrance Channel	Interior Channel
Minimum Bottom Width:	75 ft	75 ft
Minimum Depth Below Design Low Water:	3 ft below deepest draft boat or 5 ft, whichever is greater	2 ft below deepest draft boat or 4 ft, whichever is greater

B3. Fairway Design Criteria

Table B - 2 Minimum Fairway Widths and Depths

Fairways →	Without Side-Ties	With Side-Ties
Minimum Width	1.75 L_b L_b = length of longest berth ***perpendicular*** to the fairway.	1.50 L_{bb} L_{bb} = length of longest boat side-tied ***parallel*** to fairway.
	If boats longer than the berths will be allowed to overhang into the fairway, L_b should be considered to be the length of the boats.	The minimum width of the fairway does not include the width of the side-tie berth. See Tables B - 5 and B - 6 for powerboat and sail boat berth widths.
Minimum Depth	Same as for Interior Channels See Table B - 1	

B4. Berth Design Criteria

B4.1 Berth Length and Water Depth

Table B - 3 Minimum Berth Depth

Berth Length (feet)	Minimum Berth Water Depth (feet)	
	Powerboats	**Sailboats**
Up to 45 ft	6 ft	6 ft
Up to 55 ft	8 ft	8 ft
Up to 65 ft	8 ft	10 ft
Over 65 ft	Site Specific Determination	

B4.1.1 The values shown in Table B - 3 reflect only the minimum depth requirements for berths of various length ranges. These minimum water depths must be applied with reference to site specific historic low water level data such as tide tables for coastal marinas, and hydrographic records for river and lake marinas.

B4.1.2 For the purpose of these guidelines, the berth length is considered to be the actual length of the dock or pier that defines the berth, i.e. the length of fingerfloats.

B4.1.3 In cases where the berth length cannot be determined, as in the case of a long dock without fingerfloats, each 40 feet will be considered as a berth, particularly for the purpose of determining the total number of berths in a marina to compute the required minimum number of accessible berths. See Section B5.1.1.

B4.2 Single Berths

B4.2.1 Minimum Single Berth Widths

See Table B-4 below, where:

L_{sb} = length of single berth
W_{sbp} = width of single berth for powerboat
W_{sbs} = width of single berth for sailboat
ln = $\log^n$

Table B - 4 Minimum Single Berth Widths

Application ↓	Minimum Widths of Single Berths (feet)	
	Powerboats	**Sailboats**
Design Work	$W_{sbp} = 8 \ln L_{sb} - 14$ ft	$W_{sbs} = 6.5 \ln L_{sb} - 10.5$ ft
Useful for Preliminary Layout and Planning Work	$W_{sbp} = (L_{sb} / 4) + 6$ ft $- R_{pb}$ R_{pb} = Reduction Factor for powerboats = 0.20 ft per ft of berth length under 30 ft and 0.125 ft per ft over 40 ft	$W_{sbs} = (L_{sb} / 5) + 5.5$ ft $- R_{sb}$ R_{sb} = Reduction Factor for sailboats = 0.125 ft per ft of berth length under 30 ft and 0.075 ft per ft over 40 ft.
	Note: The widths of recreational boat berths are generally based on average boat beams + 2 feet.	

B4.2.2 The equations for design work will probably be used most of the time for both planning and design work. However, the equations for preliminary layout and planning work should not be disregarded. They can be memorized and used in the field without the aid of a table or a calculator, and are a valuable aid in computing potential berth widths "in your head" when on site and in meetings. As shown for both powerboats and sailboats in Table B - 5 and Table B - 6 respectively, the two types of equations give similar results.

Table B-5 Single Berth Widths for Powerboats

Single Berth Widths for Powerboats 0.20 ft reduction per ft below 30 ft 0.125 ft reduction per ft above 40 ft					
Berth Length (ft)	Width Design Formula 8 ln L_b - 14 (ft)	Preliminary Layout & Planning Width Reduction			Recommended Berth Width (ft)
		(L_b / 4) + 6.0 - R_{pb} = Reduced Width (ft)			
16	8.2	10.0	-2.8	7.2	7.0
18	9.1	10.5	-2.4	8.1	8.0
20	10.0	11.0	-2.0	9.0	9.0
22	10.7	11.5	-1.6	9.9	10.0
24	11.4	12.0	-1.2	10.8	11.0
26	12.1	12.5	-0.8	11.7	12.0
28	12.7	13.0	-0.4	12.6	12.5
30	13.2	13.5			13.5
32	13.7	14.0			14.0
34	14.2	14.5			14.5
36	14.7	15.0			15.0
38	15.1	15.5			15.5
40	15.5	16.0			16.0
42	15.9	16.5	-0.25	16.25	16.0
44	16.3	17.0	-0.50	16.50	16.5
46	16.6	17.5	-0.75	16.75	16.5
48	17.0	18.0	-1.00	17.00	17.0
50	17.3	18.5	-1.25	17.25	17.0
52	17.6	19.0	-1.50	17.50	17.5
54	17.9	19.5	-1.75	17.75	17.5
56	18.2	20.0	-2.00	18.00	18.0
58	18.5	20.5	-2.25	18.25	18.0
60	18.8	21.0	-2.50	18.50	18.5
62	19.0	21.5	-2.75	18.75	18.5
64	19.3	22.0	-3.00	19.00	19.0
66	19.5	22.5	-3.25	19.25	19.0
68	19.8	23.0	-3.50	19.50	19.5
70	20.0	23.5	-3.75	19.75	19.5
72	20.2	24.0	-4.00	20.00	20.0
74	20.4	24.5	-4.25	20.25	20.0
76	20.6	25.0	-4.50	20.50	20.5
78	20.9	25.5	-4.75	20.75	20.5
80	21.1	26.0	-5.00	21.00	21.0

Table B-6 Single Berth Widths for Sailboats

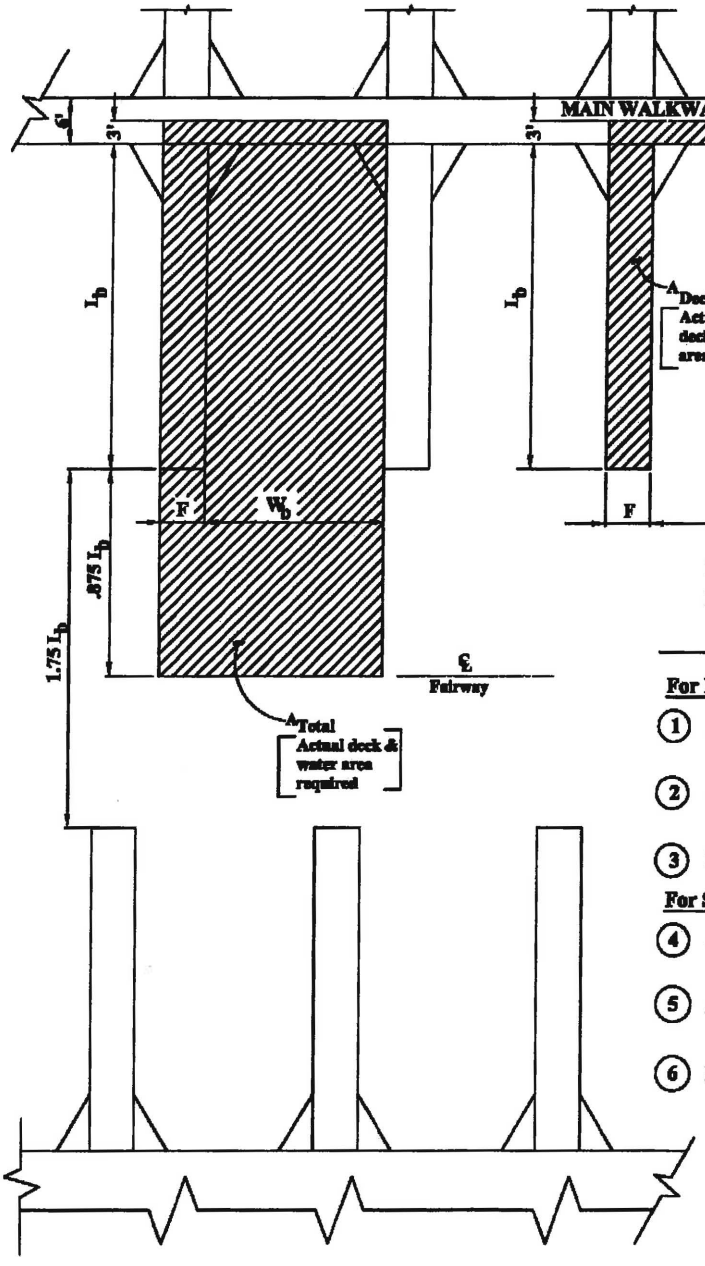
Single Berth Widths for Sailboats 0.125 ft reduction per ft below 30 ft 0.075 ft reduction per foot above 40 ft					
Berth Lengths (ft)	Width Design Formula 6.5 ln L_b - 10.5 (ft)	Preliminary Layout & Planning Width Reduction			Recommended Berth Widths (ft)
		(L_b / 5) + 5.5 - R_{sb} = Reduced Width (ft)			
16	7.5	8.7	-1.75	6.95	7.0
18	8.3	9.1	-1.50	7.60	8.0
20	9.0	9.5	-1.25	8.25	8.5
22	9.6	9.9	-1.00	8.90	9.5
24	10.2	10.3	-0.75	9.55	10.0
26	10.7	10.7	-0.50	10.20	10.5
28	11.2	11.1	-0.25	10.85	11.0
30	11.6	11.5			11.5
32	12.0	11.9			12.0
34	12.4	12.3			12.5
36	12.8	12.7			13.0
38	13.1	13.1			13.0
40	13.5	13.5			13.5
42	13.8	13.9	-0.15	13.75	14.0
44	14.1	14.3	-0.30	14.00	14.0
46	14.4	14.7	-0.45	14.25	14.5
48	14.7	15.1	-0.60	14.50	14.5
50	14.9	15.5	-0.75	14.75	15.0
52	15.2	15.9	-0.90	15.00	15.0
54	15.4	16.3	-1.05	15.25	15.5
56	15.7	16.7	-1.20	15.50	15.5
58	15.9	17.1	-1.35	15.75	16.0
60	16.1	17.5	-1.50	16.00	16.0
62	16.3	17.9	-1.65	16.25	16.5
64	16.5	18.3	-1.80	16.50	16.5
66	16.7	18.7	-1.95	16.75	17.0
68	16.9	19.1	-2.10	17.00	17.0
70	17.1	19.5	-2.25	17.25	17.5
72	17.3	19.9	-2.40	17.50	17.5
74	17.5	20.3	-2.55	17.75	18.0
76	17.6	20.7	-2.70	18.00	18.0
78	17.8	21.1	-2.85	18.25	18.5
80	18.0	21.5	-3.00	18.50	18.5

Table B-7
SINGLE BERTH LAYOUT PLANNING DATA

"F" Width of Finger (ft)	"L_b" Length of Berth (ft)	Powerboats			Sailboats		
		Numbered Equations: See Table B-8					
		1	2	3	4	5	6
		Total Berth Area (ft^2)	Actual Deck Area (ft^2)	Berths per Acre	Total Berth Area (ft^2)	Actual Deck Area (ft^2)	Berths per Acre
2.5	16	352.5	72.0	123.6	330.7	70.1	131.7
	18	427.1	79.9	102.0	396.4	77.4	109.9
	20	504.9	87.4	86.3	464.6	84.4	93.8
3.0	22	607.5	107.2	71.7	557.2	103.8	78.2
	24	692.4	115.3	62.9	631.6	111.5	69.0
	26	779.6	123.2	55.9	707.8	119.0	61.5
	28	869.0	131.0	50.1	785.8	126.5	55.4
	30	960.4	138.6	45.4	865.5	133.8	50.3
	32	1053.7	146.2	41.3	946.7	141.1	46.0
	34	1148.8	153.6	37.9	1029.4	148.3	42.3
4.0	36	1316.1	200.0	33.1	1183.9	194.4	36.8
	38	1418.2	209.3	30.7	1273.0	203.4	34.2
	40	1521.9	218.5	28.6	1363.3	212.4	32.0
	42	1626.9	227.7	26.8	1454.7	221.4	29.9
	44	1733.4	236.8	25.1	1547.3	230.3	28.2
	46	1841.1	245.9	23.7	1641.0	239.2	26.5
	48	1950.2	254.9	22.3	1735.6	248.0	25.1
	50	2060.4	263.9	21.1	1831.3	256.8	23.8
	52	2171.8	272.8	20.1	1927.9	265.5	22.6
	54	2284.3	281.7	19.1	2025.4	274.3	21.5
	56	2397.9	290.6	18.2	2123.8	283.0	20.5
	58	2512.5	299.5	17.3	2223.0	291.7	19.6
	60	2628.2	308.3	16.6	2323.1	300.3	18.8
5.0	62	2864.0	382.1	15.2	2543.2	374.0	17.1
	64	2985.3	392.8	14.6	2648.5	384.6	16.4
	66	3107.6	403.6	14.0	2754.6	395.2	15.8
	68	3230.7	414.3	13.5	2861.4	405.8	15.2
	70	3354.6	425.0	13.0	2969.0	416.3	14.7
	72	3479.4	435.6	12.5	3077.2	426.9	14.2
	74	3605.1	446.3	12.1	3186.0	437.4	13.7
	76	3731.5	456.9	11.7	3295.5	447.9	13.2
	78	3858.7	467.6	11.3	3405.7	458.5	12.8
	80	3986.6	478.2	10.9	3516.4	468.9	12.4

FIGURE B-1
SINGLE BERTH LAYOUT SCHEME

(BASED ON 6FT WIDE MAIN WALKWAY)



MINIMUM VALUES FOR "F" (SEE SECT. C1.1)

L_b	F
Up to 20'	2.5'
21' to 35'	3.0'
36' to 60'	4.0'
61' & Up	5.0'

For Powerboats, $W_b = 8 \ln L_b - 14$

For Sailboats, $W_b = 6.5 \ln L_b - 10.5$

EQUATIONS

For Powerboats:

(1) $A_{Total} = (1.875 L_b + 3)(F + 8 \ln L_b - 14)$

(2) $A_{Deck} = F(L_b + 3) + 3(8 \ln L_b - 14)$

(3) Berths per Acre $= \frac{43{,}560 FT^2/AC}{(1)}$

For Sailboats:

(4) $A_{Total} = (1.875 L_b + 3)(F + 6.5 \ln L_b - 10.5)$

(5) $A_{Deck} = F(L_b + 3) + 3(6.5 \ln L_b - 10.5)$

(6) Berths per Acre $= \frac{43{,}560 FT^2/AC}{(4)}$

B4.3 Double Berths

B4.3.1 Minimum Width for Double Berths of Same Length

Unless otherwise necessary, a double berth will typically be twice the width of a single berth of the same length.

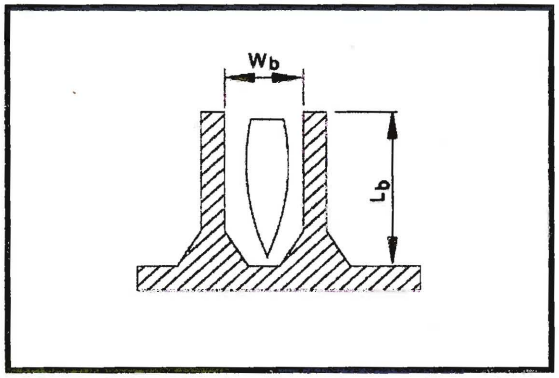
W_{db} = width of double berth
= W_{sb} x 2

B4.3.2 Minimum Width for Double Berths of Different Lengths

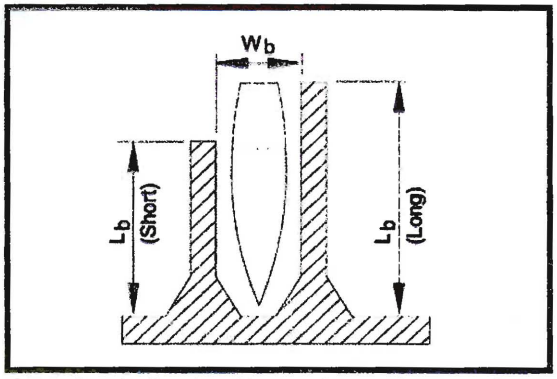
Where a double berth consists of two single berths of different lengths, the double berth width (W_{db}) will be equal to the sum of the two single berth widths (W_b) based on their lengths:

$$W_{db} = W_{sb1} + W_{sb2}$$

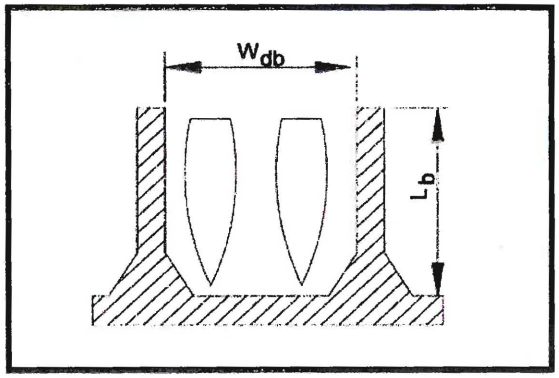
B4.3.3 Where it is desired to install a fingerfloat to divide an existing double berth into two single berths, additional berth width must be provided for the fingerfloat to avoid reduction of the design widths of the two single berths.



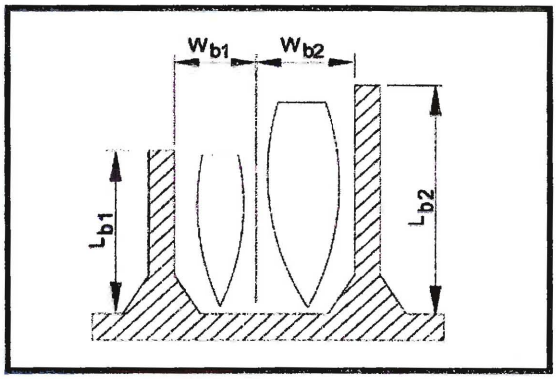
Single Berth – Equal Length Fingerfloats



Single Berth – Unequal Length Fingerfloats



Double Berth – Equal Length Fingerfloats

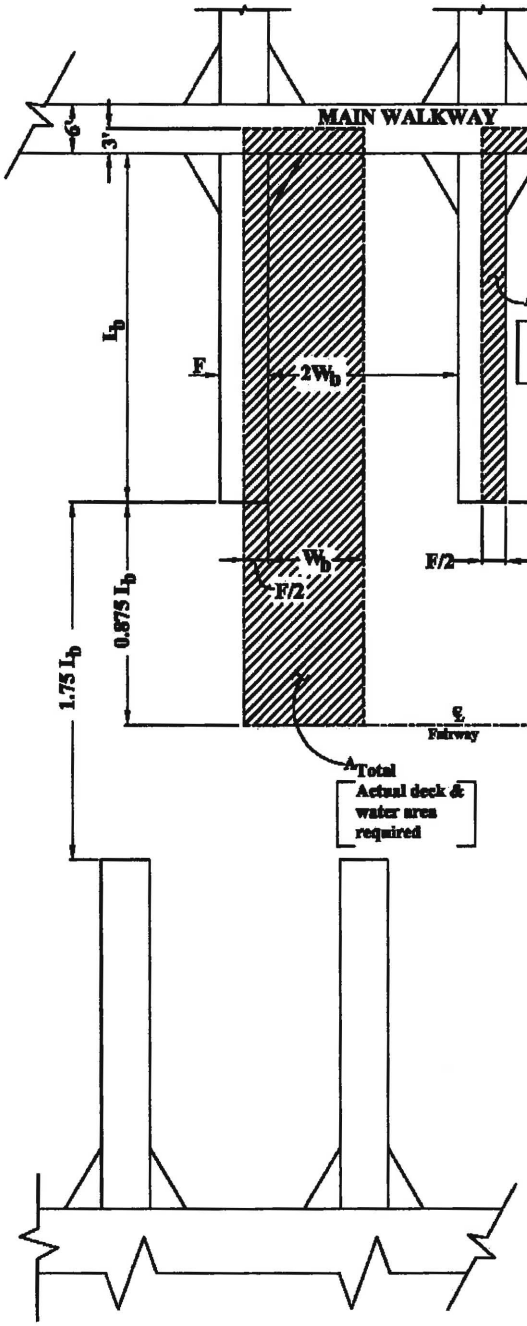


Double Berth – Unequal Length Fingerfloats

Table B-8
DOUBLE BERTH LAYOUT PLANNING DATA

"F" Width of Finger (ft)	"L_b" Length of Berth (ft)	Powerboats			Sailboats		
		Numbered Equations: See Table B-10					
		7	8	9	10	11	12
		Total Berth Area (ft^2)	Actual Deck Area (ft^2)	Berths per Acre	Total Berth Area (ft^2)	Actual Deck Area (ft^2)	Berths per Acre
2.5	16	311.2	48.3	140.0	289.5	46.3	150.5
	18	381.2	53.6	114.3	350.5	51.1	124.3
	20	454.2	58.6	95.9	414.0	55.7	105.2
3.0	22	541.1	69.7	80.5	490.8	66.3	88.8
	24	620.4	74.8	70.2	559.6	71.0	77.8
	26	702.0	79.7	62.1	630.2	75.5	69.1
	28	785.7	84.5	55.4	702.6	80.0	62.0
	30	871.5	89.1	50.0	776.6	84.3	56.1
	32	959.2	93.7	45.4	852.2	88.6	51.1
	34	1048.7	98.1	41.5	929.2	92.8	46.9
4.0	36	1175.1	122.0	37.1	1042.9	116.4	41.8
	38	1269.7	127.3	34.3	1124.5	121.4	38.7
	40	1365.9	132.5	31.9	1207.3	126.4	36.1
	42	1463.4	137.7	29.8	1291.2	131.4	33.7
	44	1562.4	142.8	27.9	1376.3	136.3	31.6
	46	1662.6	147.9	26.2	1462.5	141.2	29.8
	48	1764.2	152.9	24.7	1549.6	146.0	28.1
	50	1866.9	157.9	23.3	1637.8	150.8	26.6
	52	1970.8	162.8	22.1	1726.9	155.5	25.2
	54	2075.8	167.7	21.0	1816.9	160.3	24.0
	56	2181.9	172.6	20.0	1907.8	165.0	22.8
	58	2289.0	177.5	19.0	1999.5	169.7	21.8
	60	2397.2	182.3	18.2	2092.1	174.3	20.8
5.0	62	2565.9	219.6	17.0	2245.0	211.5	19.4
	64	2677.8	225.3	16.3	2341.0	217.1	18.6
	66	2790.7	231.1	15.6	2437.8	222.7	17.9
	68	2904.4	236.8	15.0	2535.2	228.3	17.2
	70	3019.0	242.5	14.4	2633.3	233.8	16.5
	72	3134.4	248.1	13.9	2732.2	239.4	15.9
	74	3250.7	253.8	13.4	2831.7	244.9	15.4
	76	3367.7	259.4	12.9	2931.8	250.4	14.9
	78	3485.5	265.1	12.5	3032.6	256.0	14.4
	80	3604.1	270.7	12.1	3133.9	261.4	13.9

FIGURE B-2
DOUBLE BERTH LAYOUT SCHEME
(BASED ON 6FT WIDE MAIN WALKWAY)



MINIMUM VALUES FOR "F" (SEE SECT. C1.1)

L_b	F
Up to 20'	2.5'
21' to 35'	3.0'
36' to 60'	4.0'
61' & Up	5.0'

For Powerboats, $W_b = 8 \ln L_b - 14$
For Sailboats, $W_b = 6.5 \ln L_b - 10.5$

EQUATIONS

For Powerboats:

(7) $A_{Total} = (1.875 L_b + 3)(\frac{F}{2} + 8 \ln L_b - 14)$

(8) $A_{Deck} = \frac{F}{2}(L_b + 3) + 3(8 \ln L_b - 14)$

(9) Berths per Acre $= \frac{43{,}560 FT^2/AC}{(7)}$

For Sailboats:

(10) $A_{Total} = (1.875 L_b + 3)(\frac{F}{2} + 6.5 \ln L_b - 10.5)$

(11) $A_{Deck} = \frac{F}{2}(L_b + 3) + 3(6.5 \ln L_b - 10.5)$

(12) Berths per Acre $= \frac{43{,}560 FT^2/AC}{(10)}$

B5. Minimum Required Number of Accessible Berths

B5.1 ***The minimum required number of accessible berths shall be provided as per Table B5.1.***

B5.1.1 ***Where the number of boat slips is not identified, such as along the edge of a long side-tie dock for example, each 40 feet of linear dock edge, or fraction thereof, shall be counted as one boat slip.***

Example: A side-tie dock 375 ft long would be considered to be 10 berths.

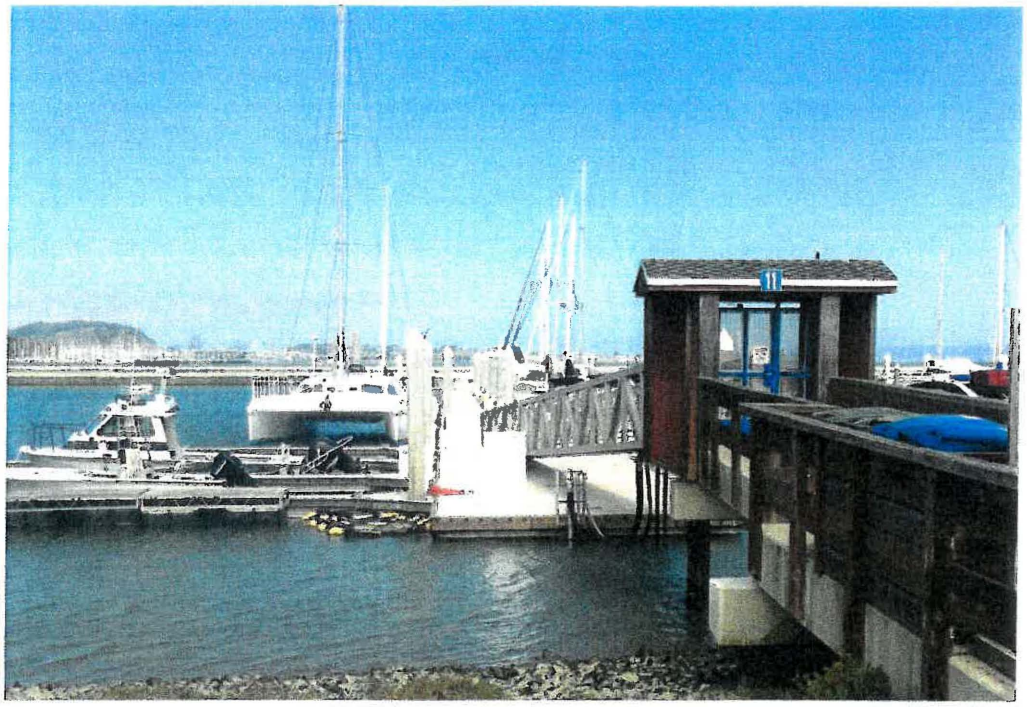
B5.1.2 The total number of berths in a marina facility must include all single berths, double berths, side-tie berths, end-tie berths, open berths and covered berths, as well as berths that are components of courtesy landings, visitor docks, fuel docks, sewage pumpout docks, harbor master office docks, haul out and repair docks, etc.

Table B-9
Minimum Required Number of Accessible Berths
(ADAAG Table 15.2.3)

Total Number of Boat Slips	Minimum Number
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
810 to 900	11
901 to 1000	12
1001 and over	12, plus 1 for each 100 or fraction thereof over 1000

NOTES

San Mateo County Harbor District
Oyster Point Marina & Park
Marina Facility Condition Survey



Prepared for:

San Mateo County Harbor District

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2185 North California Blvd, Suite 500
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November 2014

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Table of Contents

Executive Summary

This report addresses the condition of the Oyster Point marina facility on San Francisco Bay operated by the San Mateo County Harbor District. The facility has been in operation since the early 1960s and had major additions in the 1980s. The facility has a full time staff that operates and maintains the facility. The replacement value of the facility is $26 million, as shown in Table 1. The marina is now more than 50 years old and many of the facilities within are near or beyond the expected useful life—the nominal life often used for depreciation.

Because the facility has been maintained, it can be expected to remain in service beyond the expected useful life with increased maintenance effort and cost. At some point the cost or effort to maintain the facility exceeds the replacement cost or the decreased function or appearance of the facility affects revenue, at which point it should be replaced. This report identifies and prioritizes maintenance of the facility and identifies areas that are in need of replacement. The floating docks are the greatest asset in terms of replacement cost and a primary factor in the appeal and revenue potential of the marina. The older docks 12-14 are in poor condition and should be replaced soon. All other docks are in fair condition and are serviceable and can remain in service for at least 5 years with increased maintenance. There are no conditions at the marina that poses an immediate threat to life safety or loss of function to boat mooring and access to the water.

The assement of the condition of the facility was performed by gathering information from the Marina staff including the staff's identification of known deficiencies and items in need of maintenance or replacement. This information, supplemented by visual observations by our engineers of the marine facilities (docks, piers, and breakwaters), buildings and site facilities (paving, utilities, and lighting) was used to assess the condition of the overall facility. Based upon the condition, needed repairs were identified, costs estimated were categorized (capital, maintenance or improvement) and prioritized from 1 (highest) to 3 (lowest). All repairs identified will continue to extend the useful life and replace those items that are beyond the useful life to ensure continued function.

The assessment also addresses the potential effects of Sea Level Rise at the marina. The Harbor Master's building will most likely need to be relocated and the peninsula raised, as well as portions of the Bay Trail to the dock gates.

	Asset Life (YR)			Replacement
Facility	**Installed**	**Useful Life**	**Remain**	**Cost**
Marine				**$ 22,160,000**
Dock 1	1988	30	4	$ 800,000
Dock 2	1988	30	4	$ 1,300,000
Dock 3	1988	30	4	$ 1,260,000
Dock 4	1988	30	4	$ 1,370,000
Dock 5	1988	30	4	$ 1,320,000
Dock 6	1988	30	4	$ 1,640,000
Dock 8	2012	30	28	$ 640,000
Dock 11	2012	30	28	$ 1,300,000
Dock 12	1983	30	-1	$ 1,420,000
Dock 13	1983	30	-1	$ 1,930,000
Dock 14	1983	30	-1	$ 1,260,000
Fishing Pier	2006	50	42	$ 500,000
Gates	1983	50	19	$ 1,300,000
Boat Ramp	2009	30	25	$ 1,500,000
Breakwaters	1980	50	16	$ 4,620,000
Building				**$ 2,140,000**
Entrance Kiosk	1988	30	4	$ 20,000
Harbor Master	1988	30	4	$ 410,000
Maintenance	1984	30	0	$ 390,000
Utility	1984	30	0	$ 40,000
Utility Vacuum	1983	30	-1	$ 80,000
Restroom 4	1988	30	4	$ 240,000
Restroom 5	1988	30	4	$ 240,000
Restroom 2	1988	30	4	$ 240,000
Restroom 3	1988	30	4	$ 240,000
Restroom 1	1988	30	4	$ 240,000
Site				**$ 2,210,000**
Boat Apron	1981	30	-3	$ 120,000
Center Connector	1981	30	-3	$ 170,000
East Road	1998	30	14	$ 410,000
East Lower	1961	30	-23	$ 200,000
East Upper	2011	30	27	$ 310,000
Marina Blvd	1981	30	-3	$ 350,000
South Bay Trail	1998	30	14	$ 70,000
West Road	1981	30	-3	$ 540,000
West Connector	1981	30	-3	$ 40,000
Grand Total				**$ 26,500,000**

Table 1: Facility Assets of Oyster Point

	Priority				
Repair Project type	**1**	**2**	**3**	**4**	**Grand Total**
Maintenance	**$ 57,705**	**$ 95,700**	**$ 95,460**		**$ 166,705**
Dock 1		$ 17,000			$ 17,000
Dock 2		$ 18,300			$ 18,300
Dock 3			$ 27,500		$ 27,500
Dock 4			$ 33,300		$ 33,300
Dock 5		$ 15,200			$ 15,200
Dock 6		$ 16,700			$ 16,700
Harbor Master	$ 22,705				$ 22,705
Maintenance		$ 16,000			$ 16,000
Dock 1	$ 12,000				$ 12,000
Dock 2		$ 3,000			$ 3,000
Dock 3		$ 3,000			$ 3,000
Gate			$ 27,000		$ 27,000
Harbor Master	$ 19,000	$ 2,500	$ 2,660		$ 24,160
Maintenance	$ 4,000		$ 5,000		$ 9,000
Restroom 4 & 5		$ 4,000			$ 4,000
Capital	**$ 30,000**	**$ 605,000**	**$ 654,000**	**$ 4,250,000**	**$ 5,539,000**
Dock 12				$ 1,230,000	$ 1,230,000
Dock 13				$ 1,560,000	$ 1,560,000
Dock 14			$ 35,000	$ 1,070,000	$ 1,105,000
East Lower			$ 70,000		$ 70,000
Harbor Master		$ 20,000			$ 20,000
Maintenance		$ 15,000		$ 390,000	$ 405,000
Marina Bl			$ 174,000		$ 174,000
Restroom 4		$ 240,000			$ 240,000
Restroom 4 & 5	$ 30,000	$ 50,000			$ 80,000
Restroom 5		$ 240,000			$ 240,000
West Breakwater		$ 40,000	$ 300,000		$ 340,000
East Breakwater			$ 75,000		$ 75,000
Grand Total	**$ 87,705**	**$ 700,700**	**$ 749,460**	**$ 4,250,000**	**$ 5,787,865**

Table 2: Repair Project Prioritized Costs

1. Introduction

The purpose of this report is to provide a summary of the facility condition surveys (FCS) performed at the Oyster Point Marina & Park (Oyster Point) located on the San Francisco Bay in the City of South San Francisco, California. San Mateo County Harbor District (SMCHD) asked Moffatt & Nichol (M&N) to visually inspect and evaluate the conditions of the waterside and shoreside structures at the facility. This report identifies the components that require repairs, a prioritized schedule for repair and maintenance of each survey component (i.e., docks, hoists, buildings, etc.), and costs for repair.

Waterside inspections were performed by M&N, while sub-consultants from Mesiti-Miller assisted with the shoreside inspections. The inspections were performed in February and March 2014. Photographs of deficiencies, along with general photographs referenced in this report are provided in Attachment A. Attachment B presents the locations of the various facilities, and Attachment D lists the deficiencies at these facilities.

1.1. Scope

The services performed for this report are based upon our proposal dated November 4, 2013 and summarized here:

1. Meet with SMCHD staff to receive information and input on known deficiencies at Oyster Point to serve as the basis for the FCS.

2. Perform on-site inspections over 4 person-days at the marina to observe the overall condition of:
   - Waterside: floats, docks, piers, ramps, moorings, and utilities (topside and in a boat)
   - Shore side: buildings, mechanical and electrical systems, road and parking lot paving, storm drains, signage, and electrical distribution
   - Identify Code deficiencies observed on site

3. Prepare a Report on the Condition Survey to include:
   - Condition Ratings of each component
   - Estimated remaining life span expectancy in 5 year increments (e.g. 5, 10, 15, etc.)
   - Costs: 5-Year costs to repair, presented as estimated Maximum Allowable Construction Cost (MACC) including an inflation factor
   - Repair priority based on the condition, remaining life expectancy, and fire/life safety considerations

1.2. Description of Facilities

Initial construction of the East Harbor at Oyster Point was performed in 1962. The shore facilities are built over a capped landfill. The landfill continued in operation until 1977. The West harbor was constructed in 1978 along with other shoreside improvements. Other improvements were added that include the Fishing Pier, Boat Ramp and additional restrooms and shoreside parking. A figure showing the layout of Oyster Point is provided in Figure 1 and a larger version is provided in Attachment B.

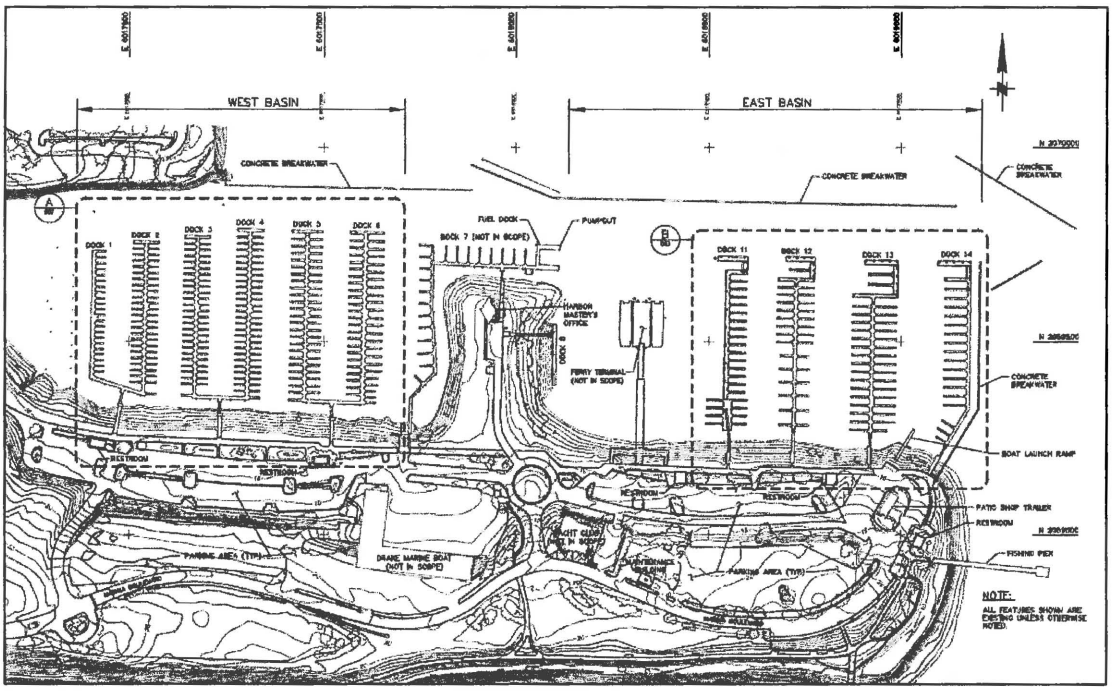

Figure 1: Oyster Point Site Plan (see larger version in Attachments)

Oyster Point includes a 390-berth marina (floating docks, gangways, piles), boat launch ramp, fishing pier swimming beach, hand launch facility (wind surf, kayak) and other facilities that are not owned by the SMCHD that include: commuter ferry facilities, Drake Marine building and docks (dock 7), a snack bar modular unit, the Oyster Point Yacht Club building, and other facilities. The marina is protected from the San Francisco Bay by multiple concrete sheet pile breakwaters.

Docks 1 through 14 are arranged from west to east, with the Harbor Master's building located on a strip of land dividing the berthing areas into the West Basin (Docks 1 – 6) and East Basin (Docks 11-14). Docks 1-6 are timber deck and frame construction with polyethylene enclosed floatation, Docks 6 and 7 are of similar construction. Docks 12-14 are older and constructed of solid laminated deck on polyethylene enclosed floatation. Docks 8 (guest) and 11 were replaced with new concrete docks in 2013. Concrete docks (floating breakwater dimension) were installed at the ends of Docks 11 to 14 in 2012 as part of modifications to the marina for the ferry terminal. There is a public fishing pier located outside the east breakwater, constructed of concrete decking and cap beams on top of concrete piles. There is a public two lane boat launch ramp located between docks 13 and 14.

The Harbor District is responsible for eight buildings, roadways, parking lots, and sidewalks for marina access throughout the facility. The visual assessments of these buildings were conducted during February 2014. The building inspection consisted of The Harbor Master's office building, the maintenance building, the entrance kiosk, five restrooms, and an equipment building.

1.3. Methodology

The facility survey was based upon input received from SCMHD onsite personnel at meetings held on January 28, 2014. Following the meeting, engineers made visual observations onsite of the conditions of the facilities during January to March 2014. The breakwaters and pier at Oyster Point were observed by boat. The conditions were rated using a system similar to that used on the previous condition assessment report ("SCHD Marina Evaluation, October 2007 Bluewater Design Group) to facilitate comparison of the changes over time. Once the condition was rated, the priority and cost and any needed repair or replacement was determined. The methods for these 3 parameters of condition, priority and cost are described following.

Condition Rating is a numeric score from 0 through 100 given for each component that allows ranking comparison of facilities. The number is based upon visual observations of the facilities qualitative condition as described in Table 3. The remaining service life is the amount of time the component is expected to remain serviceable without further maintenance, in its present condition. The range is generally five year intervals, such as "5-10" or "10-15." The measure of remaining service life is to be distinguished from the "useful life" that is used in the valuation of an asset, described below.

The overall rating of an entire system, such as a group of docks (e.g. Dock 4) is comprised of the average of all of the individual ratings given to each item within the system (e.g. each dock finger and the main walkway), compiled within a spreadsheet from the onsite ratings.

Condition	Description	Remaining Service Life	Condition Rating
NEW (N)	Like-new condition	More than 15	100
GOOD (G)	Generally new condition	10-15	80
FAIR (F)	Serviceable condition, lightly worn due to normal wear	5-10	60
WORN (W)	Exhibits cracking, corrosion, or other indicators of deterioration. Still serviceable but requires maintenance to extend the service life.	Less than 5	40
REPLACE (R)	Worn to the point of needing immediate replacement or major repair.	Should replace in 1-2 years	20

Table 3: Condition Rating

Priority is the level of importance or urgency that the component should be repaired or replaced. The numeric assignment is based upon safety and the function of the component as follows:

1. System or element is in failure, or is expected to fail in the next year. Safety: Such failure will pose significant risk of injury. Function: will adversely affect the facilities ability to operate (e.g. separation of a dock would block access to the remaining dock even if not a safety risk)

2. System or element is currently functional, but has a probability of failing before the next scheduled inspection or 5 years. Safety: such failure poses little risk to safety. Function: may result in a temporary and minor loss of facility operations.

3. System or element is expected to remain functional until the next scheduled inspection or at least 5 years. If failure does occur, it poses no safety risk and will not likely result in the significant loss of facility operation

Cost- the cost for repair or replacement is based upon the following

- Means Building Construction Cost Data and Heavy Construction Cost Data
- Cost data from construction of similar projects
- Input from SCMHD and Engineering judgment

Type –The cost and type of repair or replacement project is further broken out into a budgetary category as follows:

C- Capital - One time repair or replacement typically costing over $10,000 to correct.

M- Recurring Maintenance - Repair/maintenance actions that occur with a frequency of less than 10 years with a cost of less than $10,000 per action

M1- Scheduled Maintenance - Repair/maintenance actions that typically occur annually or more frequently with a cost of less than $5,000 per year.

I- Improvement-a repair or replacement that provides greater functionality than the existing system.

Asset Life

When a facility is first placed in service (new) it is assigned a nominal "useful life"-a duration of time during which function can be expected with little or no maintenance. The duration is based upon experience with the type of facility. For example, a concrete structure may have a useful life of 50 years, where the same structure built of timber may have a useful life of 30 years. This duration is often used for depreciating an asset in financial planning. The remaining useful life is the difference between the years an asset has been in service and the original useful life. The remaining useful life is guideline in planning of maintenance and replacement costs; as it approaches 0 increased maintenance to extend the service life (actual years in use, described previously) or replacement should be planned.

Facility Groups

The facilities within the marinas were classified into 3 groups: Marine, Buildings and Site and given number groups by hundreds with which to identify individual features as follows:

- Marine
    - 100 Docks (floats, piles)

- 200 Gates (access pier, gate, gangway)
- 300 Structures (piers, boat ramps, bulkhead, rip rap)

- Buildings 400 (shoreside and on piers)
- Site 500 (Roads, parking lots, paving, utilities, lighting)

For example the gates are number 201, 202, etc. and buildings 401, 402, etc in addition to their existing names. The plans of each marina (Attachment B) and the Detail Condition Survey Sheets (Attachment D) use these numbers to group and identify features.

These procedures and symbols were used to record the data in the inspection, and are used in this report to present the results of the survey.

2. Condition Assessment

2.1. Floating Docks

Each floating dock is made up of a main walkway with finger piers extending on either side. The components evaluated in the inspection were: timber (or concrete) deck, timber waler, and the flotation of the dock. Docks 1 through 6 are in fair to good condition; Dock 11 is in new condition (newly replaced in 2013); and Docks 12 through 14 are in worn condition. Some parts of the docks are worse than others. Problems observed with the decking were heavy build-up of moss causing slip hazards or general wear and splitting of the timber. The timber walers were generally in good condition throughout the facility. The problems observed with flotation were twisting of the fingers and uplifting at finger ends, especially at Docks 1 and 2. This is feature of timber docks over time when the wood warps due to exposure to moisture and permanent set that develops in the timber. It is most feasible to replace the docks when the funds are available.

Some walers have separated from the finger framing. These should be reattached by nailing or bolting. Similarly, the rub strip fenders that are attached to sides of the fingers have been damage from use or are not attached in many locations. These rub strips and walers should be reattached as part of ongoing maintenance.

Decking should be replaced in segments where it is worn. This was observed to have been done in segments at Pillar Point. The decking generally has more moss growth on the ends of the fingers, and more moss growth in general on the fingers towards the ends of the docks. It is recommended to power wash the fingers to remove the moss.

The marine growth on the floats is light to moderate.

The condition of docks 12 through 14 is to the point where it would not be worthwhile to repair; it would be better to replace the entire dock (except for the new concrete end portions).

Guide Piles

All the guide piles are in good condition, no deficiencies were found.

Pile Guides

The pile guides at all the docks consist of steel angles bolted to the dock surface. Photograph 1 in Attachment A shows a typical pile guide in good condition. The pile guides are generally in good condition, with a few exceptions. The following pile guides should be replaced within the next two years due to missing bolts or corrosion, four pile guides at Dock 1 (Photograph 1 and Photograph 2,) one at Dock 2, and one at Dock 3.

Utilities

The boxes for utilities are in good condition. There are a few locations of corrosion on the boxes, and it is recommended to recoat these areas during the normal maintenance cycle.

2.2. Gate

The gate structures are in fair to good condition and some appear to be recently replaced or finished. There are a few areas of corrosion on the grating. It is recommended to monitor this corrosion to see how quickly it increases, however it is not a problem at this time. The concrete caps that support the gate structure are cracked on many of the gates. Some have been repaired with an injection to seal the crack. This is likely due to chloride intrusion that has reached the reinforcing steel and corrosion has initiated and expanded.

Gangways

The gangways are in good condition. The walking surface is even and has appropriate non-slip surfacing. There was no visible corrosion or deficiencies.

ADA/Accessibility

The recent replacement of docks 8 and 11 installed 80 ft long gangways onto the docks, as well as accessible slips on dock 11. This provides required access to the marina for disabled persons. If future docks are replaced, the use of a similar 80 ft long gangway should be considered for increased access, though not required.

2.3. Marine Structure

Boat Ramp and Floats

Fishing Pier

The fishing pier is a concrete structure (concrete decking, beams, and piles) and is in good condition. There are no significant cracks or corrosion stains on the deck, beams, or piles. There

were signs of epoxy injection ports on some beams near the outside end of the pier, although no rust or cracking was observed. It is likely these were to remedy something immediately after the initial construction. The handrails are constructed of wood, and appear to be sound.

The abutment of the pier was recently fit with an ADA compliant access gangway.

Seawall/Breakwater

The breakwater is in fair-good condition overall. There are spalls along the top on portions of the structure. These do not presently affect the function of the breakwater, however the exposed rebar at the spall locations could lead to significant corrosion in the rebar and extend further throughout the structure. It is recommended that the rebar get cleaned, coated, and patched up with new concrete. There are many gaps between segments along the length of the breakwater, likely due to initial driving of the sheets wandering. This allows minor leakage during high waves, but does not pose a significant problem.

2.4. Buildings

Harbor Master's Office Building:

Structural

This one story 1,220 square foot building was constructed in the early 1980s and structurally appears to be in fair condition. The roof consists of 1/2" plywood over 2x6 decking with heavy timber framing supported by timber pole columns. The foundation consists of a 12" thick reinforced concrete mat over nine 12" square by 125 foot long concrete pilings. The lateral force resisting system appears to be conventional wood framed shear walls. The finishes consist of wood shake roofing, exterior T1-11 wood siding and interior gypsum board. It is evident that the ground has settled significantly below this building (Photograph 3). The stability of the building is not compromised by this condition due to the deep foundations. It was reported that during high tides of +6.9 or greater the access road to this building and its parking lot are below water.

The Building Functions and Operations

The building contains spaces for administrative functions, safety operations and public interface. There is a waiting area and secretary's counter. A multi-purpose room on the south side of the building serves as a meeting space as well as a break room for those working in the office. On the north side of the building is a lofted platform for the harbor master and a general administrative work area. There is one restroom.

The General Condition of the Interior Layout and Finishes

The finishes are generally in fair to worn condition. Floor tile in the waiting area is cracked and missing in some places. The tile damage is caused mostly by shifting of the building due to settlement. The carpet throughout the building is worn and in need of replacement. The metal frame around the main entrance door is corroded because of rain infiltration. The windows on the south face of the building are due to be replaced. The sills on the interior are worn and show

signs of leaking in some areas. Some areas of the walls show signs of cracking from settlement and scratches from general use. The paint overall is in fair condition. The handrails along the steps up to the harbor master work area are in good condition but the paint has worn through in some places.

The kitchenette finishes in the multi-purpose room are in fair to worn condition. The fixtures and appliances are functioning. The upper cabinets are metal while the lower cabinets are wood. The countertop is plastic laminate. The upper cabinets are worn and are in need of replacement.

The restroom finishes are in good condition. The restroom looks to have been recently remodeled. Walls, floors and fixtures are all clean and operational. The restroom appears to be ADA compliant with proper door size, five-foot interior clearance and grab bars.

The heat exchanger has been recently replaced.

The General Condition of the Exterior and Access

The exterior finishes are in worn condition. The roof looks original to the building. There is a considerable amount of moss growing on the north side of the building's roof. The siding is cracked and shows signs of corrosion from the windows weeping and nail-heads which have begun to rust. Siding has been added as a skirt below the original siding because of the settlement of the surrounding site. Downspouts around the building are being pulled down because of the subsiding site and the exposed, unpainted areas are rusting through. The HVAC and exterior plumbing connections to the main building are being damaged as they sink and separate from the main building. The condenser pad has sunk because of soil settlement, as well.

Clerestory windows on the north side of the building have been reported to leak. They were recently sealed by harbor staff.

The ramp leading to the main entrance of the building is too steep to meet current ADA standards. The handrails are also non-ADA compliant and are in worn condition.

Accessibility and Operational Improvements

1. The ramp and handrails leading up to the main entrance need to be made compliant

Deferred Maintenance and Repair

1. Roof needs to be replaced; clerestory windows can be addressed concurrently
2. Exterior siding needs to be replaced
3. Exterior windows need to be replaced
4. Interior window sills need to be replaced
5. Interior floor finishes need to be replaced
6. Walls need to be repaired and repainted
7. Cabinets in the multi-purpose room should be replaced

Entrance Kiosk:

Structural

This is a small one story 100 square foot building constructed in the early 1980s and structurally appears to be in fair condition. The roof consists of conventional wood framing over stud walls with a 4" thick slab on grade. The finishes consist of wood shake roofing, exterior T1-11wood siding and interior gypsum board. The raised concrete pad beyond the kiosk's foundation appears to have settlement cracks (Photograph 4).

Maintenance Building:

Structural

This one story 2,300 square foot prefabricated metal building was constructed in the early 1980s and structurally appears to be in fair condition. The roof consists of standing seam metal panels over cold formed steel purlins over rigid steel frames. The exterior has metal siding with horizontal wall girts between frame columns. The foundation consists of a slab on grade with a masonry retaining wall on the south side of the building. The interior space has been in filled with partition walls with gypsum board finishes. A wood framed mezzanine has been added to the west end of the building. The mezzanine is supported by wood posts at its center and supported by wall girts on its north side and a masonry wall on its south side. It appears that the mezzanine's load on the wall girt may have bowed out the wall at the northwest corner of the building (Photograph 5).

The Building Functions and Operations

The building houses a large area for maintenance and storage of equipment and materials. A loft space above the maintenance area, accessed via ladder, serves as extra storage space. There is also a small office with a service window, a restroom with a shower and a small kitchen/break room. Outside of the administrative spaces is a half-height wall with lockers on either side.

The building is also completely uninsulated.

The General Condition of the Interior Layout and Finishes

The interior finishes of the building are generally in very worn condition. The floor of the maintenance area is uneven and sinking in several areas. The frame around the exterior door on the south side of the building is crooked because of shifting of the building. There is a large gap along the top of the door.

There is vinyl tile floor in front of the lockers and in the office and is in worn condition.

The finishes in the kitchen/break room are in fair condition. The tile floor is in fair condition. Cabinets, countertops and fixtures are functional and in fair condition.

The restroom finishes are generally in worn condition. The floor tile is cracked and missing in some places. Some areas have been patched with mismatched tile. The walls are scuffed and stained and are in need of repainting. Toilet partitions are in worn condition with heavy staining and damage to the metal base trim. Pieces of the ceiling grid are damaged and show signs of water

damage. The base cabinets and countertop are in fair condition. Fixtures are in fair condition and are functional.

The General Condition of the Exterior and Access

The metal siding on the exterior is in fair condition. The roll-up metal doors are in fair condition. Exterior windows and doors are stressed and show signs of corrosion.

Accessibility and Operational Improvements

1. The building has shifted significantly and should be considered for total replacement

Deferred Maintenance and Repair

1. Exterior windows and doors need to be replaced
2. Large sections of the interior slab should be replaced
3. Vinyl tile flooring should be replaced
4. Finishes and fixtures should be updated and replaced

Utility Building:

Structural

The 80 square foot building serves as a used oil collection facility. It looks to have been built within the last five years. It is generally in good condition. The exterior paint and finishes look new. The roll-up door is in good condition with the exception of corrosion forming at the bottom of the door. The equipment inside is in good condition.

Restrooms #1, #2 & #3 East Side:

Structural

These structures are one story prefabricated metal buildings originally constructed in the early 1980s and recently refurbished (Photograph 6). The buildings appear to be in good condition structurally. The roofing is cedar shake over 1x4 wood skip sheathing over 22 gauge standing seam roofing supported by cold formed steel roof framing. The walls are constructed of 18 gauge cold formed steel studs with T1-11 exterior wall siding and 18 gauge metal interior wall panels. Restrooms #1 and #2 are approximately 560 square foot and restroom #3 is approximately 440 square foot. The foundations consist of reinforce concrete slab foundation with raised curbs. The exterior of the building has ornamental timber poles and roof outriggers.

The Building Functions and Operations

Restroom 1 is located at the easternmost edge of the site. It serves as the public restroom facilities and has no controlled access. There is also a storage room in the back of the building. There is one H.C. accessible space immediately adjacent to the facility. The accessible route looks new and up

to current ADA standards. There is a small sewage facility located directly behind the restroom building.

Restroom 2 is located west of Restroom 1. This is a private, access controlled facility with men's and women's restrooms. The H.C. accessible route looks new and up to current ADA standards.

Restroom 3 is located west of Restroom 2. This is a private, access controlled facility with men's and women's restrooms and two shower facilities. There are two H.C. accessible parking spaces with the accessible route covering over 150 LF. This route looks new and up to current ADA standards.

The General Condition of the Exterior and Interior

The interior and exterior finishes of all three restrooms were in like-new condition at the time of the survey. The materials and fixtures were appropriately chosen and work well for their intended use.

Restrooms #4 & #5 West Side:

Structural

These one story 440 square foot buildings appear to be in fair condition structurally. No information was provided on the age of construction. They are conventionally framed wood buildings with similar dimensions and layout. The roofing is asphalt shingle over 2x decking over 2x stud bearing walls. They have a slab on grade foundation. The exterior finish is T1-11 siding and the interior is finished fiberglass panels over particle board. The particle board was installed between the wall framing making it difficult to remove. The exterior of the building has ornamental timber poles and roof outriggers. It was reported that the interior particle board has been replaced in some areas due to swelling and moisture damage. Swelling of the wall panels was observed in the men's restroom at a few locations (Photograph 7).

The General Condition of the Exterior and Access

Both restrooms have non-compliant ramp approaches to the restroom facilities. Siding and other exterior finishes are in worn condition with some areas of the trim beginning to separate from the building. The exterior doors are also worn and have handles and hardware that are beginning to fail.

The roof seems to be in fair condition.

The General Condition of the Interior Layout and Finishes

The interior finishes are generally worn. The floors throughout are fading and cracked. The toilet partitions show signs of abuse and the fixtures need to be updated and replaced. The metal base trim around the walls is separating in some areas and showing signs of corrosion. Benches in the shower areas are worn and show signs of rot.

Suggested Accessibility and Operational Improvements

1. Updating building ramp from the parking lot; making it ADA compliant

Suggested Deferred Maintenance and Repair

1. Replacing floors throughout
2. Upgrading fixtures; including partitions
3. Repairing walls and metal wall trim
4. Replacing exterior doors and hardware

Electrical Vacuum Building:

Structural

This is a small one story building 190 square foot building and structurally appears to be in fair condition. It has asphalt shingle roofing over plywood sheathing supported by carpenter trusses with conventional exterior stud walls (Photograph 8). The foundation is slab on grade with a pit for the vacuum equipment. The exterior finish is T1-11 siding with no interior finishes.

2.5. Site

Roads

The roads appear to be in a worn condition with the exception of the new asphalt concrete pavement in the east basin. Potholes and alligator cracking (Photograph 9) were observed as well as standing water due to inadequate drainage (Photograph 10).

Parking

The parking areas appear to be in a worn condition with the exception of the new paved areas in the east basin. A large percentage of the parking areas are unpaved with a gravel surface. Standing water was observed in several paved and gravel lots (Photograph 11 and Photograph 12).

Sidewalks

The asphalt sidewalks appeared to be in fair condition (Photograph 13).

Underground Utilities

No observations of the underground utilities was made. Based upon input received, the main problems are in the East Basin: there is corrosion in electrical conduit that makes pulling of new cable difficult and splices below ground corrode and need to be sealed. The electric switchgear is obsolete and should be replaced. All utilities need to be raised above the capped landfill as many are below the cap.

Surface Utilities

The parking lot appeared to have a storm drain system with drop inlets near the landscaping areas but standing water was observed in the parking area (Photograph 14). It may be prudent to have further investigation of the underground storm drain system.

Landscaping

The landscaping area by the boat launch ramp consisted of trimmed lawn in good condition. The landscaping near the fishing pier appeared to be native foliage in worn condition. The landscaping near the parking lots appeared to be in fair condition (Photograph 15) and well maintained.

2.6. Sea Level Rise (SLR) Analysis

The consensus approach to SLR is to plan for 16 inches of increase by 2050 and 55 inches by 2100. The annual highest tide in 2014 at Oyster Point is 8.29 ft (MLLW), projecting this would correspond to 9.62 in 2050 and 12.87 in 2100. It should be noted that higher tides of almost 2 ft have been observed (estimated) than 8.29 ft, however, planning for the highest annual tide will rarely be exceeded.

There is frequent flooding of the parking lot between the East and West Basin at the Harbormaster's office now, which will only get more frequent in the next 10 years. It is likely that the office should be moved to higher ground as placing fill to raise the ground will increase surcharge and induce settlement on the compressible landfill below.

Other features that will be affected further into the future are the access gates to all the docks, which are presently at elevation 10, approx. The tops of guide piles may need to be extended if they are not replaced by 2050. The elevations need to be confirmed to ensure the docks will still be restrained. Similarly, the top of the breakwater and wave overtopping may occur as sea levels rise.

3. Recommended Repairs

1. See Table 2 for a summary of repairs. See Attachment D for descriptions of deficiencies and needed repairs at the various facilities and Attachment B for locations of the facilities.
2. Perform electrical inspections annually per State Fire Code requirements and thermal scans of electrical panels

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Attachment A: Photographs

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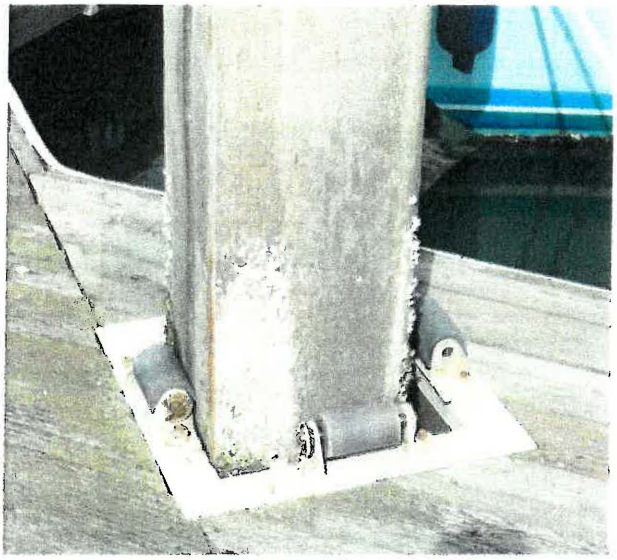
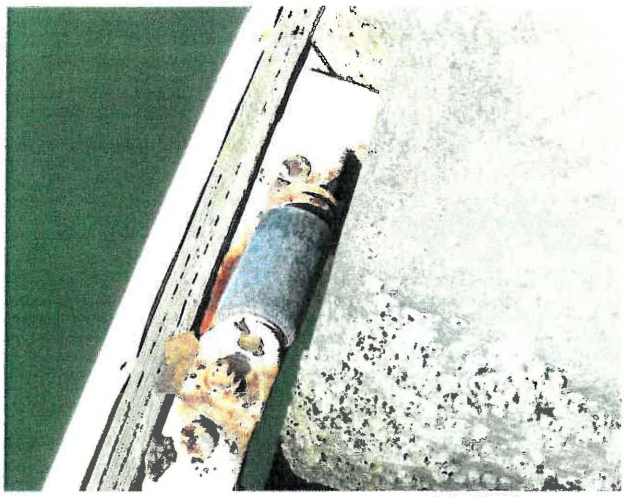
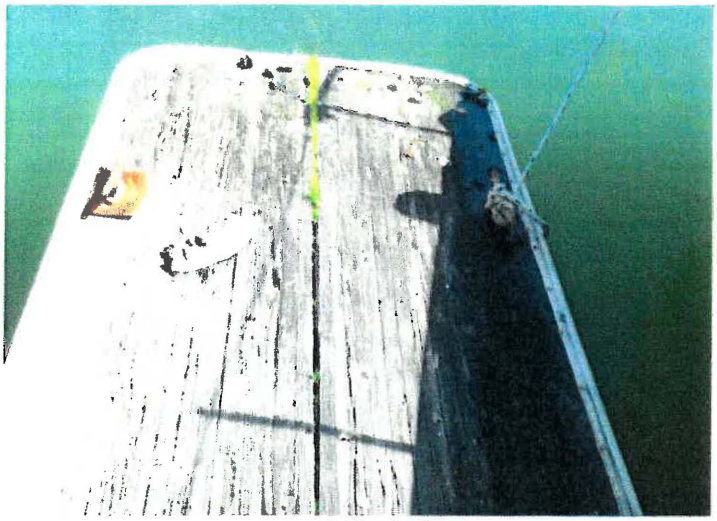


Photograph 1: Typical Pile Guide -Good Condition (Dock1)

Photograph 2b-Dock 13 Fingers



Photograph 2: Pile Guide Damage – Dock 1, Slip 6-8



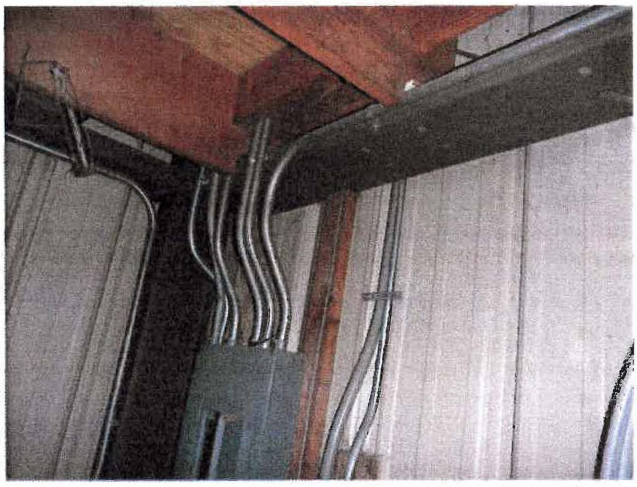
Photograph 2c-Dock 13 Finger

Photograph 2a: Dock 4

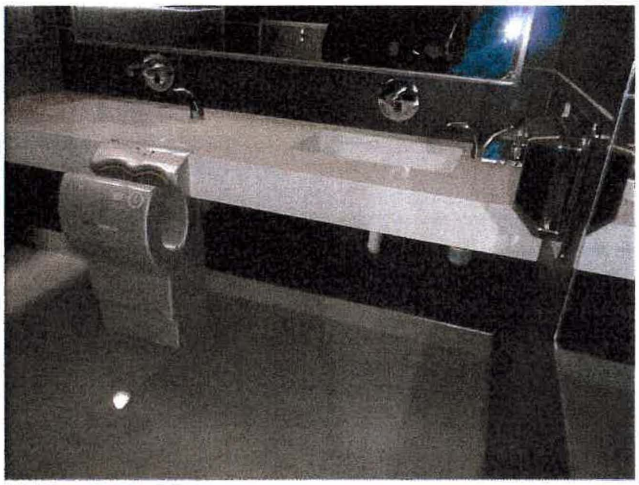
Photograph 2d-Dock 11 Gate

Photograph 3: Harbor Master's Office Building

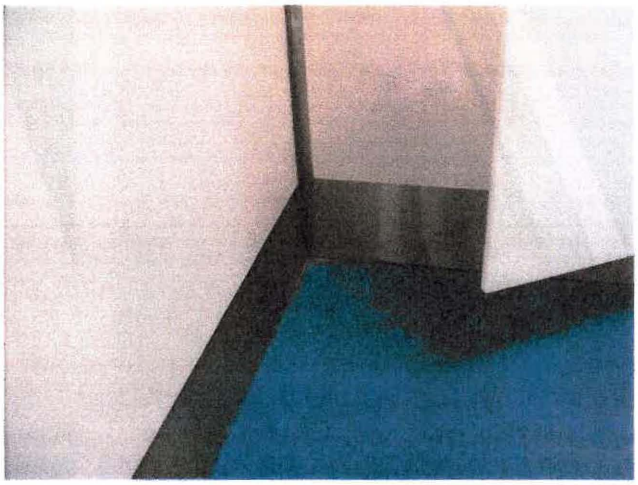
Photograph 4: Kiosk Building



Photograph 5: Maintenance Building



Photograph 6: Restroom #1

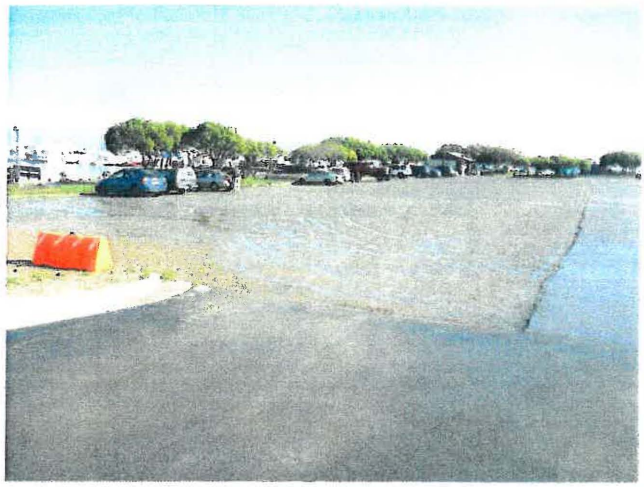


Photograph 7: Restroom #4

Photograph 8: Electrical Vacuum Building

Photograph 11: Paved Parking Lot

Photograph 9: Potholes & Alligator Cracking



Photograph 12: Gravel Parking Lot

Photograph 10: Standing Water

Photograph 13: Sidewalk

Photograph 14: Storm Drain and Standing Water in Oyster Point Parking Lot

Photograph 15: Landscaping

Attachment B: Facility Location Plans

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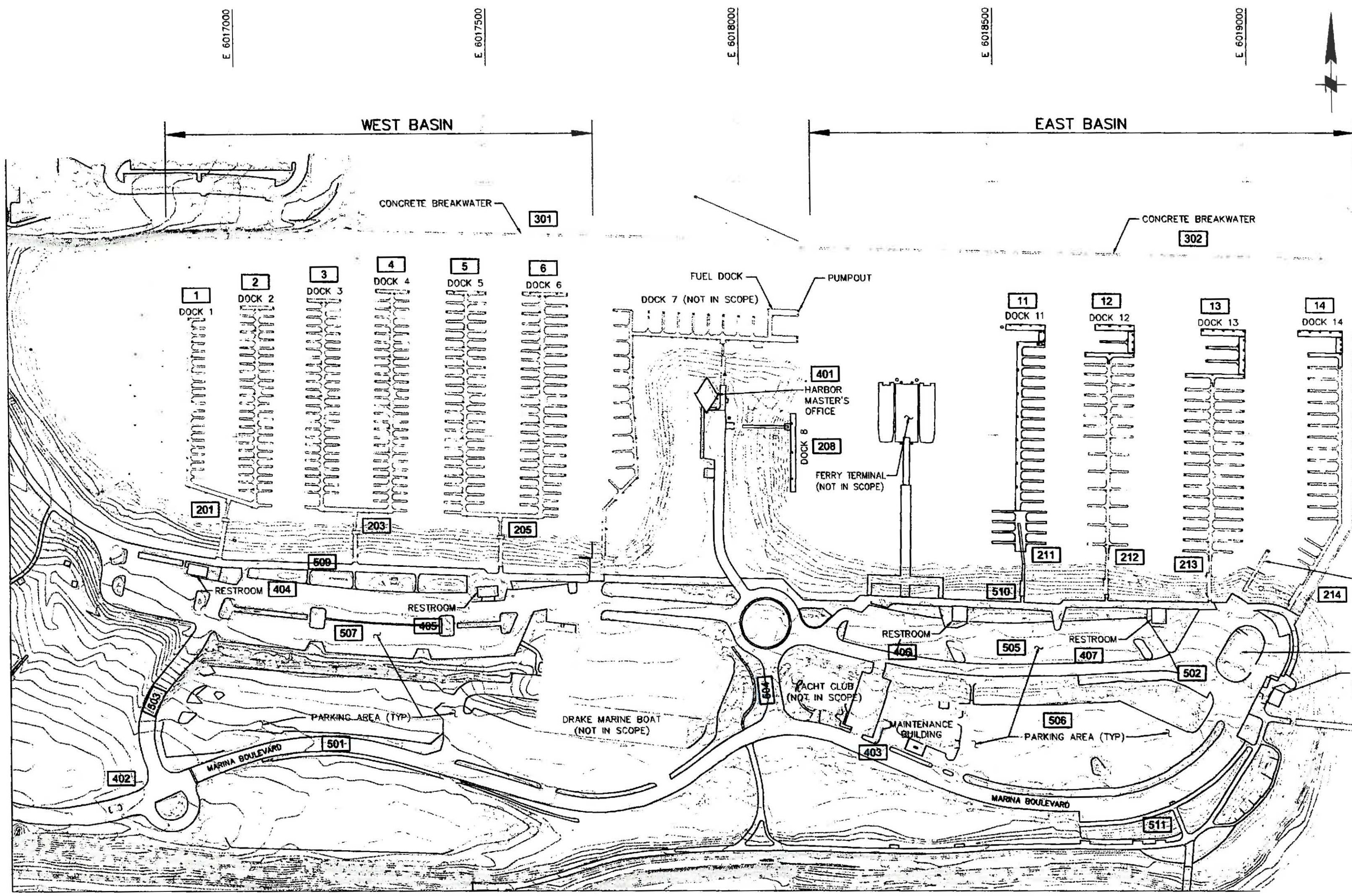

LEGEND:

[XX] = FACILITY NUMBER:

1 DOCKS
2XX GATES
3XX MARINE STRUCTURES
4XX BUILDINGS
5XX SITE

SEE FACILITY CONDITION ASSESSMENT SHEETS FOR CONDITION OF ASSOCIATED FACILITY NUMBERS SHOWN HERE.

N 2070000

CONCRETE BREAKWATER 303

N 2069500

CONCRETE BREAKWATER 305

N 2069000

NOTES:

1. ALL FEATURES SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
2. SEE FACILITY CONDITION ASSESSMENT SHEETS FOR CONDITION OF ASSOCIATED FACILITY NUMBERS SHOWN HERE.

GRAPHIC SCALE

100 0 100 200

1" = 100'

SITE PLAN

1" = 100'

SAN MATEO COUNTY HARBOR DISTRICT
400 Oyster Point Blvd, Suite 300
South San Francisco, CA 94080
(650) 583-4400

REVISION	DESCRIPTION	BY	DATE

moffatt & nichol
2185 N.California Blvd, Suite 500
Walnut Creek, California 94596(925) 944-5411

DSGN	DR	CHK
EP	TE	BP
JOB NO. 8281	SUBMITTED BY	TITLE

FACILITY CONDITION SURVEY
OYSTER POINT MARINA
PILLAR POINT HARBOR

OYSTER POINT
OYSTER POINT OVERALL PLAN

DATE 03/26/14

SHEET - OF --

001

P:\8281 SMCHD Condition\a_CADD\8281 00 OPM_001.dwg Nov 10, 2014 - 10:38am

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Attachment C: Input from SMCHD Staff

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moffatt & nichol

Client Meeting

2185 No. California Blvd., Suite 500, Walnut Creek, CA 94596-3500

PROJECT	SMCHD Condition Survey 8281 WC13	DATE	1/28/2014 2:00 PM - 4:00 PM
ORGANIZER	Brad Porter	SUBJECT	FCS at Oyster Pt Marina
LOCATION	Harbor Office		
INVITEES	Brad Porter, Scott Grindy, Erica Petersen, Linda, Jim Merlo, Charles White		
ATTENDEES	Brad Porter (Moffatt & Nichol), Scott Grindy (San Mateo County Harbor District), Linda (San Mateo County Harbor District), Jim Merlo (San Mateo County Harbor District), Charles White (San Mateo County Harbor District)		
CC			

MEETING COMMENTS

For Jim and Charles to bring forth items for the FCS at OPM.

MEETING MINUTES

ACTUAL START DATE 1/28/2014 2:00 PM

MINUTES

Reviewed list of items they have observed that need attention, divided between west and east basins (from Harbormaster Bldg)

West Basin

1. Raise HarborMaster Road above high tide--floods at higher tides regularly.
2. Bay trail needs overlay
3. Striping, has been done by City, and on the list to redo, but needs now. There has been turnover at City and things are getting less attention.
4. Lawn trail should either be removed or redone—likely remove. Shorenstein (developer) was going to develop but never did.
5. Beach nourishment needed
6. Landscaping dying from drought, and old age. Need redesign, some may be under developer's responsibility.
7. Lot doesn't drain well. Regrade.
8. At joint either grind and use petromat or dig out and repave.
9. D2 lot-by guard shack needs to be maintained for erosion.
10. Parcel A-trees on Oyster Pt Blvd down to guard shack, and shoreline on s side need maintenance or replacement.
11. Replace transformer housings, corroded—docks put in 1987.
12. Replace RR—prefabs. Would like prefab concrete allow $200k at least. Existing walls are fiber board and water wicks up and they fail, they are maintaining them but beyond repair
13. Utilities are pretty sound, main feeds ok. All conduit is flooded on site. Problems are splices. They use Sikaflex to seal splice in a plastic bag which works well and is more cost effective than other products.
14. Replace cleat bolts often, at end of life.
15. Docks will need though rod replacements.
16. Dock floatation is ok, could use diver cleaning of biofouling that loads them

MEETING MINUTES

East Basin

1. Elect switch gear is obsolete (near turn around) sweeps and conduit is corroded UG, hard to make pulls.
2. Need to fill on roads where there is settlement (area is on old refuse landfill--will continue to sink)
3. Replace docks 12-14. Remaining life: ??? Have replaced some sections. Shortening of the docks from the wave attenuators has helped some. (SG-Will ask Bellingham for cost to replace). Could they remove fingers to allow use of side ties? if they do, track reduction in SF for use on other.
4. Seawall repairs on breakwater on N side. Spalls after EQ
5. East basin parking lot needs to be paved on N side, need storm drainage added.
6. Resurface Bay Trail, some erosion underneath
7. Landscape get drought resistant added
8. Replace maintenance bldg. (E side of yacht club). Slab is in good shape but bldg. is not. Get level on slab?
9. Build new office and maint shop all in one on the east lot? may be efficiencies for staff all being together.
10. Ground around Harbor master bldg. is sinking, Bldg is on piles. Added lattice is to cover sinking. Utils getting pulled from subsidence.
11. East shore erosion near guest dock—slope is sloughing off. May take sheetpile to hold?
12. Raise utils above landfill cap. No gravity lines there so all could be raised.
13. SS has a vacuum system, may be obsolete, better to add a few lift stations.
14. Docks-SG would like pumpouts on dock , use a peristaltic at gate that pulls from all slips at that dock would be desireable. Add at least 1 pumput on guest dock so they had 2, 1 can go down.
15. East basin has all LED, west basin needs doing 30 lights to be converted, 480 vac all light now
16. Pier is in good condition
17. Fish cleaning station: any redo would require going to a SS discharge of the fish parts.
18. Look at SLR of 3 feet: look at 1, 2 and 3 feet. Impact to add.
19. Jim will send list of permanent mounted equipment that needs replacement, repair.
20. Send Jim a list of drawings we want and they'll copy.

Discussed overall project: No set deadline for report.

Attachment D: Facility Condition Assessment Sheet

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Facility				Asset Life (YR)				Condition				Costs ($)	
Grou	SubNo.	Location	Feature	Installed	Useful Life (1)	Age	Remain	Description	Rating	Priority	Years Remain	Replace	Type
Docks	1	Dock 1	Floats	1988	30	26	4	Replace worn decking and bumpers	60	2	5-10	$ 700,000	M
	2	Dock 2	Floats	1988	30	26	4	Replace worn decking and bumpers	75	2	10	$ 1,080,000	M
	3	Dock 3	Floats	1988	30	26	4	Replace worn decking and bumpers	65	3	5-10	$ 1,140,000	M
	4	Dock 4	Floats	1988	30	26	4	Replace worn decking and bumpers	60	3	5-10	$ 1,220,000	M
	5	Dock 5	Floats	1988	30	26	4	Replace worn decking and bumpers	80	2	10-15	$ 1,140,000	M
	6	Dock 6	Floats	1988	30	26	4	Replace worn decking and bumpers	80	2	10-15	$ 1,320,000	M
	7	Dock 8	Floats	2012	30	2	28	New	100	3	15+	$ 600,000	
	11	Dock 11	Floats	2012	30	2	28	New	100	3	15+	$ 1,290,000	
	12	Dock 12	Floats	1983	30	31	-1	Oldest docks, replace when funded	50	4	5	$ 1,230,000	C
	13	Dock 13	Floats	1983	30	31	-1	Oldest docks, replace when funded	50	4	5	$ 1,560,000	C
	14	Dock 14	Floats	1983	30	31	-1	Oldest docks, replace when funded	50	4	5	$ 1,070,000	C
	101	Dock 1	Guide piles	1988	30	26	4	Good condition	90	3	10+	$ 100,000	
	102	Dock 2	Guide piles	1988	30	26	4	Good condition	90	3	10+	$ 220,000	
	103	Dock 3	Guide piles	1988	30	26	4	Good condition	90	3	10+	$ 120,000	
	104	Dock 4	Guide piles	1988	30	26	4	Good condition	90	3	10+	$ 150,000	
	105	Dock 5	Guide piles	1988	30	26	4	Good condition	90	3	10+	$ 180,000	
	106	Dock 6	Guide piles	1988	30	26	4	Good condition	90	3	10+	$ 320,000	
	108	Dock 8	Guide piles	2012	30	2	28	Good condition	90	3	10+	$ 40,000	
	111	Dock 11	Guide piles	2012	30	2	28	Good condition	100	3	15+	$ 10,000	
	112	Dock 12	Guide piles	1983	30	31	-1	Good condition	90	3	10+	$ 190,000	
	113	Dock 13	Guide piles	1983	30	31	-1	Good condition	90	3	10+	$ 360,000	
	114	Dock 14	Guide piles	1983	30	31	-1	Good condition	90	3	10+	$ 190,000	
		Dock 1	Pile Guides	1988	######	26	#####	4 Pile guides to replace: missing bolts or corrosion	62	1	10+, excep	$ -	M1
		Dock 2	Pile Guides	1988	30	26	4	1 to replace	87	2	10+, excep	$ -	M1
		Dock 3	Pile Guides	1988	30	26	4	1 to replace	84	2	10+, excep	$ -	M1
		Dock 4	Pile Guides	1988	30	26	4	Good condition	90	3	10+	$ -	
		Dock 5	Pile Guides	1988	30	26	4	Good condition	90	3	10+	$ -	
		Dock 6	Pile Guides	1988	30	26	4	Good condition	90	3	10+	$ -	
				2012	30	2	28					$ -	

Facility				Asset Life (YR)				Condition				Costs ($)	
Grou	SubNo.	Location	Feature	Installed	Useful Life (1)	Age	Remain	Description	Rating	Priority	Years Remain	Replace	Type
		Dock 11	Pile Guides	2012	30	2	28	Good condition	90	3	10+	$ -	
		Dock 12	Pile Guides	1983	30	31	-1	Good condition	90	3	10+	$ -	
		Dock 13	Pile Guides	1983	30	31	-1	Good condition	90	3	10+	$ 10	
		Dock 14	Pile Guides	1983	30	31	-1	Good condition	90	3	10+	$ -	
			Utilities on docks							3		$ -	
	Subtotal											$ 14,230,010	
Gates	201	Gate	Gate structure	1988	50	26	24	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	203	Gate	Gate structure	1988	50	26	24	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	205	Gate	Gate structure	1988	50	26	24	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	207	Gate	Gate structure	1988	50	26	24	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	208	Gate	Gate structure	1988	50	26	24	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	211	Gate	Gate structure	1983	50	31	19	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	212	Gate	Gate structure	1983	50	31	19	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	213	Gate	Gate structure	1983	50	31	19	Good Condition, minor corrosion of grating	90	3	10+	$ 150,000	M1
	214	Gate	Gate structure	1983	50	31	19	Good Condition, minor corrosion of grating	90	3	10+	$ 100,000	M1
		Gate										$ -	
		Gate	Gangway					Good condition	90	3	10+	$ -	
		Gate	ADA/Accessibility		2014					3		$ -	
	137	Gate	Misc							3		$ -	
	Subtotal											$ 1,300,000	
	301	West BkWater	Breakwater	1980	50	34	16		90			$ 1,020,000	
	302	East BkWater	Breakwater	1980	50	34	16	Spalling on concrete cap	80	3		$ 1,920,000	C
	303	NorthEast Offshor	Breakwater	1980	50	34	16		90			$ 540,000	
	304	outh East Offshor	Breakwater	1980	50	34	16		90			$ 230,000	

Facility				Asset Life (YR)				Condition				Costs ($)	
Grou	SubNo.	Location	Feature	Installed	Useful Life (1)	Age	Remain	Description	Rating	Priority	Years Remain	Replace	Type
	305	ock 14 Breakwate	Breakwater	1980	50	34	16	Concrete Patching	85	3		$ 910,000	C
								Subtotoal				**$ 4,620,000**	
	306	Boat Ramp-East	oat Ramp and Floa	2009	30	5	25			3		$ 1,500,000	
	307	Fishing Pier	Deck	2006	50	8	42	Deck is in good condition	90	3	10+	$ 500,000	
		Fishing Pier	Underside	2006	8							$ -	
		Fishing Pier	Piles	2006	8							$ -	
		Fishing Pier	Water	2006	8							$ -	
		Fishing Pier	Gas	2006	8							$ -	
		Fishing Pier	Electric	2006	8							$ -	
		Fishing Pier	Fire System	2006	8							$ -	
		Fishing Pier	ADA/Accessibility	2006	8							$ -	
		Fishing Pier	Misc	2006	8							$ -	
								Subtotal				**$ 2,000,000**	
								Subtotal				**$ 22,150,010**	

Facility				Asset Life (YR)				Condition				Costs ($)	
Grou	SubNo.	Location	Feature	Installed	Useful Life (1)	Age	Remain	Description	Rating	Priority	Years Remain	Replace	Type
Buildings (400)	401	Harbor Master	Structure	1988	30	26	4	Heavy timber frame	70	3	8	$ 410,000	M1
	401	Harbor Master	Roof					Wood Shingle Roof Original to building	40	1	2	$ -	M
	401	Harbor Master	Ext. Paint/finish					Painted Plywood Siding	40	3	2	$ -	M1
	401	Harbor Master	Ext. Windows					Aluminum	80	2	10	$ -	M1
	401	Harbor Master	Plumbing Vent					Damage due to subsidance	20	1	2	$ -	M1
	401	Harbor Master	Sewer/Water Connection					Damage due to subsidance	40	1	2	$ -	M1
	401	Harbor Master	HVAC					Heater recently replaced	80	2	15	$ -	M1
	401	Harbor Master	ADA/Access					Outdated, Broken Ramp to entrance	40	1	0	$ -	M
	401	Harbor Master	Int. Paint					Worn Corners/Edges	60	2	5	$ -	M1
	401	Harbor Master	Floor					Carpet and Ceramic Tile	60	1	2	$ -	M1
	401	Harbor Master	Window Sills					Wood	60	1	5	$ -	M1
	401	Harbor Master	Base Cabinets/Countertops					Wood Laminate Cabinets; Plastic Laminate Countertop; Non-Compliant	40	2	0	$ -	C
	401	Harbor Master	Upper Cabinets					Metal	40	2	5	$ -	
	401	Harbor Master	Restroom					Recently Remodeled	80	3	15	$ -	
	402	Entrance Kiosk	Structure	1988	30	26	4	Wood frame	70	3	8	$ 20,000	
	403	Maintenance	Structure	1984	30	30	0	Prefab steel frame	60	4	5	$ 390,000	C
	403	Maintenance	Ext. Siding					Corrugated Metal: Painted	40	1	5	$ -	
	403	Maintenance	Ext. Windows					Aluminum	40	3	10	$ -	M1
	403	Maintenance	Ext. Man-Doors					Severly corroded; misaligned w/ frames	20	1	0	$ -	M1
	403	Maintenance	Roll-up Doors					Same condition as siding	40	2	5	$ -	
	403	Maintenance	Int. Slab					Uneven; Sinking in some areas	20	1	5	$ -	
	403	Maintenance	Vinyl Tile Floor					Stained; Cracking	40	2	5	$ -	M
	403	Maintenance	Restroom Finishes					Floor Tile; Toilet Paritions; Ceiling Grid; Base Cabinets	20	2	5	$ -	C
	403	Maintenance	Walls					Various levels of peeling	40	2	5	$ -	M
	403	Maintenance	Kitchen/Break Room					Recently Remodeled; Not ADA-Compliant	60	2	5	$ -	
	403	Maintenance	Lockers					Equipment	60	2	5	$ -	
	403	Maintenance	Mezzanine Storage					Temporary Access Ladder	60	1	0	$ -	

Facility				Asset Life (YR)				Condition				Costs ($)	
Grou	SubNo.	Location	Feature	Installed	Useful Life (1)	Age	Remain	Description	Rating	Priority	Years Remain	Replace	Type
Buildings (400)	404	Restroom 4	Structure	1988	30	26	4	Wood frame, replace or remodel similar to recent remodels	60	2	5	$ 240,000	C
	404	Restroom 4 & 5	ADA/Access					Non-compliant	20	1	0	$ -	C
	404	Restroom 4 & 5	Exterior					Plywood Siding	60	1	5	$ -	
	404	Restroom 4 & 5	Roof					Asphalt Shingles	60	2	10	$ -	
	404	Restroom 4 & 5	Doors					Heavily Corroded; Failing hardware	20	2	5	$ -	M1
	404	Restroom 4 & 5	Int. Floors					Stained; Cracking	20	2	5	$ -	C
	404	Restroom 4 & 5	Int. Walls					Stained; Scuffed;Scratched	20	2	5	$ -	C
	404	Restroom 4 & 5	Toilet Partitions					Heavy wear	40	1	5	$ -	
	404	Restroom 4 & 5	Fixtures					Heavy wear	40	1	5	$ -	
	405	Restroom 5	Structure	1988	30	26	4	Wood frame, replace or remodel similar to recent remodels	60	2	5	$ 240,000	C
	406	Restroom 1	Structure	1988	30	26	4	Prefab metal	100	3	15+	$ 240,000	
	406	Restroom 1,2,3	ADA/Access					Recently Remodeled	100	3	15+	$ -	
	406	Restroom 1,2,3	Exterior					Recently Remodeled	100	3	15+	$ -	
	406	Restroom 1,2,3	Interior					Recently Remodeled	100	3	15+	$ -	
	407	Restroom 2	Structure	1988	30	26	4	Prefab metal	100	3	15+	$ 240,000	
	408	Restroom 3	Structure	1988	30	26	4	Prefab metal	100	3	15+	$ 240,000	
	409	Utility	Structure	1984	30	30	0	Wood frame	60	3	10	$ 40,000	
	409	Utility	Exterior					Stucco	90	3	15+	$ -	
	409	Utility	Roll-up Door					Some corrosion at base	60	3	10	$ -	
	409	Utility	Interior					Drywall	80	3	15+	$ -	
	409	Utility	Equipment					Used oil storage	80	3	15+	$ -	
	410	Utility Vacuum	Structure	1983	30	31	-1	Wood frame	60	3	5	$ 80,000	
								Subtotal				**$ 2,140,000**	

Facility				Asset Life (YR)				Condition				Costs ($)	
Grou	SubNo.	Location	Feature	Installed	Useful Life (1)	Age	Remain	Description	Rating	Priority	Years Remain	Replace	Type
Site	501	Marina Bl	Roads	1981	30	33	-3	East portion has large settlement, need regrading to drain and repave	50	3	5-	$ 350,000	C
	502	Boat Ramp-East	Roads	1981	30	33	-3		60	2	5-	$ 120,000	
	503	West Connector	Roads	1981	30	33	-3	Pavement in poor condtion, needs resurfacing	50			$ 40,000	C
	504	Center Connector	Roads	1981	30	33	-3		60			$ 170,000	
	505	East Lower	Parking	1961	30	53	-23	Gravel portion needs paveing	40	3	5-	$ 200,000	C
	506	East Upper	Parking	2011	30	3	27		70	2	5-	$ 310,000	
	507	West	Parking	1981	30	33	-3	Pavement in poor condtion, needs resurfacing	40	3	5-	$ 410,000	C
	508	Not Used										$ -	
	509	West	Walkway	1998	30	16	14	Pavement in poor condtion, needs resurfacing	40	2	5-	$ 130,000	C
	510	East	Walkway	1998	30	16	14		70	3	8	$ 410,000	
	511	South Bay Trail	Walkway	1998	30	16	14		70	3	8	$ 70,000	
			Subtotal									**$ 2,210,000**	
Oyster Point Total												**$ 26,500,010**	

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01-01	MULTI	[redacted]	[redacted]	ELLIPSIS CF 6853 EL	20.	0.	30.	*	0.	0.	40.
01-02	DF			OSPREY 3 CF 9644 PK	8.5	17.	0.	*	0.	0.	26.
01-03	MULTI				0.	17.	0.	*	0.	0.	40.
01-04	DF	[redacted]	[redacted]	ONE LOVE CF 1779 TX	0.	0.	23.3	*	0.	0.	26.
01-05	MULTI			ANDIAMO 590200	13.3	4.	39.	*	0.	0.	40.
01-06	DF			CF 7871TH	7.5	2.5	20.	*	0.	0.	26.
01-07	MULTI				0.	2.5	0.	*	0.	0.	40.
01-08	DF	[redacted]	[redacted]	Y NOTC				*	0.	0.	26.
01-09	MULTI				0.	0.	0.	*	0.	0.	40.
01-10	DF	[redacted]	[redacted]	Y NOTC				*	0.	0.	26.
01-11	MULTI			CHAT DE 1125337	23.	4.	43.	*	0.	0.	40.
01-12	DF				0.	4.	0.	*	0.	0.	26.
01-13	MULTI				0.	4.	0.	*	0.	0.	40.
01-14	DF				0.	4.	0.	*	0.	0.	26.
01-15	MULTI	[redacted]	[redacted]		0.	0.	49.5	*	0.	0.	30.
01-16	DF			SEA PRIN CF 1924 SC	8.	0.	26.	*	0.	0.	26.
01-17	ET				0.	0.	0.	*	0.	0.	40.
01-18	DF	[redacted]	[redacted]	ANGEL CF 9291 HY	0.	0.	26.	*	0.	0.	26.
01-19	MULTI			SILENT W 1086241	24.	3.	34.	*	0.	0.	36.
01-20	DF			CF 7101 RJ	8.6	5.	23.	*	0.	0.	26.
01-22	DF			HOT SAKI CF 8980 CY	7.1	3.6	22.	*	0.	0.	18.
01-24	DF			POOR BAS 4416CZ	10.	2.	26.	*	0.	0.	26.
01-26	DF			BUDGET B CF 5458 KX	8.	0.	26.	*	0.	0.	26.
01-28	DF			7209FM	0.	0.	26.	*	0.	0.	26.
01-30	DF			SLOOPY CF 5996 FN	0.	4.	25.	*	0.	0.	26.
01-32	DF			NONE CF 6932 KH	8.	3.5	22.	*	0.	0.	26.
01-34	DF			ISABELLA CF 0255 CR	0.	0.	24.	*	0.	0.	26.
01-36	DF			5474GH	0.	0.	25.	*	0.	0.	26.
01-38	DF			WALKABOU CF 5590 NK	8.6	3.5	25.	*	0.	0.	26.
01-40	DF			CF 1356 FM	0.	4.	26.	*	0.	0.	26.
01-42	DF			CF 2281 PB	0.	0.	26.	*	0.	0.	26.
01-44	DF			Y NOTC				*	0.	0.	26.
01-ETE	ET				0.	0.	0.	*	0.	0.	30.
02-01	SF	[redacted]	[redacted]	BIGGER C CF 7227 KY	9.6	2.	28.	*	0.	0.	30.
02-02	SF			4026SN	0.	0.	29.	*	0.	0.	30.
02-03	DF			CF 0220 SY	0.	0.	24.5	*	0.	0.	30.
02-04	SF			CF 6587 NG	0.	0.	20.	*	0.	0.	30.
02-05	DF			WABBIT I CF 9821HR	8.	5.	24.	*	0.	0.	30.
02-06	DF			VOLARE' CF 8661 GH	0.	0.	30.	*	0.	0.	30.
02-07	DF				0.	0.	0.	*	0.	0.	30.
02-08	DF	[redacted]	[redacted]	REEL FUN CF 9469 GW	10.1	2.5	28.	*	0.	0.	30.
02-09	DF				0.	2.5	0.	*	0.	0.	30.
02-10	DF	[redacted]	[redacted]	CF 6938 YB	0.	5.	27.	*	0.	0.	30.
02-11	DF				0.	5.	0.	*	0.	0.	30.
02-12	DF	[redacted]	[redacted]	NONE CF 2955NB	0.	0.	28.	*	30.	0.	30.
02-13	DF			BAY JAZZ CF 4005 PN	0.	0.	28.	*	0.	0.	30.
02-14	DF			PONIENTE CF 7139 GD	0.	4.	22.	*	0.	0.	30.
02-15	DF				0.	4.	0.	*	0.	0.	30.
02-16	DF	[redacted]	[redacted]	CF 0339 GM	0.	0.	30.	*	0.	0.	30.
02-17	DF			MAGIC TI CF3333LE	6.6	3.	29.	*	0.	0.	30.
02-18	DF			SHARK AT CF 2117 PK	0.	0.	27.	*	0.	0.	30.

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02-19		[redacted]	[redacted]	EAGLET CF 6205 GU	0.	0.	24.	*	0.	0.	30.
02-20				CF 7641 ST	0.	0.	22.	*	0.	0.	30.
02-21				CF 1679 CV	8.	4.	24.	*	0.	0.	30.
02-22				BAD FISH CF 8354 FS	0.	0.	25.	*	0.	0.	30.
02-23	F			Y NOTC				*	0.	0.	30.
02-24	DF			SCREAMIN CF 0880 EJ	9.5	4.5	30.	*	0.	0.	30.
02-25	DF				0.	4.5	0.	*	0.	0.	30.
02-26	DF			DOVER CO 2001 SW	11.	0.	31.	*	0.	0.	30.
02-27	DF				0.	0.	0.	*	0.	0.	30.
02-28	DF			VISIONS CF 5594 GD	0.	0.	20.	*	0.	0.	30.
02-29	DF			ALBY CF 0264 GM	0.	0.	22.	*	0.	0.	30.
02-30	DF			SANITY C CF 7204 ED	8.	3.8	25.	*	0.	0.	26.
02-31	DF				0.	3.8	0.	*	0.	0.	30.
02-32	DF			Y NOTC				*	0.	0.	30.
02-32	DF			SEA URCH CF 0585	0.	0.	27.	*	0.	0.	30.
02-33	DF			CF 0826 CA	0.	0.	24.	*	0.	0.	30.
02-34	DF			BREEZE CF 8296 ED	9.2	0.	29.	*	0.	0.	30.
02-35	DF				0.	0.	0.	*	0.	0.	30.
02-36	DF			HIGH INT CF 0799 GT	9.1	4.	25.	*	0.	0.	30.
02-37	DF				0.	4.	0.	*	0.	0.	30.
02-38	DF			GREEN DR CF 9539 FT	8.	3.5	27.	*	0.	0.	30.
02-39	DF				0.	3.5	0.	*	0.	0.	30.
02-40	DF			HUMMINGB 9782GW	0.	0.	25.	*	0.	0.	30.
02-41	DF			AFTER SH 8194FA	10.	5.	30.	*	0.	0.	30.
02-42				WAVE DAN CF 8218 KP	8.	4.	25.	*	0.	0.	30.
02-43	DF				0.	4.	0.	*	0.	0.	30.
02-44	DF			LASCIVIO 0307VE	10.	0.	27.	*	0.	0.	30.
02-45	DF				0.	0.	0.	*	0.	0.	30.
02-46	DF			BLUE GIR CF 5965 FA	0.	0.	28.	*	0.	0.	30.
02-47	DF				0.	0.	0.	*	0.	0.	30.
02-48	DF			THERAPY CF 3769 KJ	11.	0.	30.	*	0.	0.	30.
02-50	DF			Y NOTC				*	0.	0.	30.
02-ETE	ENDTIE				0.	4.	0.	*	0.	0.	30.
02-ETW	ET			POLARIS 1152GH	9.9	3.8	32.	*	0.	0.	30.
03-01	SF			BLUE NOT CF 1741 CV	8.5	4.3	25.6	*	0.	0.	30.
03-02	SF			0389SY	0.	0.	28.	*	0.	0.	30.
03-03	SF			MISS JUL CF 1287 EH	8.	3.2	25.	*	0.	0.	30.
03-04	SF			ON THE R CF 5434 GX	0.	0.	28.	*	0.	0.	30.
03-05	DF			TUFFY CF 1732 KF	8.	3.3	20.	*	0.	0.	30.
03-06	DF			REBECCA CF 6925 HC	11.	5.5	30.	*	0.	0.	30.
03-07	DF			CF 0822 ED	0.	0.	25.	*	0.	0.	30.
03-08	DF			N/A R705123	0.	0.	28.	*	0.	0.	30.
03-09	DF			FRIHET CF 0032 SY	9.1	5.1	31.	*	0.	0.	30.
03-10	DF			CRESENDO CF 5586 GB	0.	0.	28.	*	0.	0.	30.
03-11	DF			OASIS CF 5983 GU	9.	5.	25.	*	0.	0.	30.
03-12	DF			SF GROUP CF 6185 UP	0.	0.	26.	*	0.	0.	30.
03-13	DF			KATHLEEN CF 2779HL	11.	5.3	30.	*	0.	0.	30.
03-14	DF			CF 6444 GG	8.	8.	28.	*	0.	0.	30.
03-15	DF				0.	8.	0.	*	0.	0.	30.
03-16	DF			MISS LIL 1045156	0.	0.	32.	*	0.	0.	30.
03-17	DF				0.	0.	0.	*	0.	0.	30.

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03-18	DF	[redacted]		220 SPOR CF 6309 TG	10.1	0.	22.	*	0.	0.	30.
03-19	DF	[redacted]		4 MY GIR CF 5156 RM	10.	3.4	28.	*	0.	0.	30.
03-20	DF	[redacted]		SEAHAWK CF 5446 KW	10.	3.	27.5	*	0.	0.	30.
03-21	DF				0.	3.	0.	*	0.	0.	30.
03-22	DF	[redacted]		CF 4331 CZ	0.	0.	25.	*	0.	0.	30.
03-23	DF				0.	0.	0.	*	0.	0.	30.
03-24	DF	[redacted]		DOL-FIN CF 6956 EJ	11.	0.	28.	*	0.	0.	30.
03-25	DF	[redacted]		SATURDAY 644376	0.	0.	27.	*	0.	0.	30.
03-26	DF	[redacted]		THE BITC CF 9002 EL	0.	0.	27.	*	0.	0.	30.
03-27	DF				0.	0.	0.	*	0.	0.	30.
03-28	DF	[redacted]		8788FN	0.	0.	27.	*	0.	0.	30.
03-29	DF	[redacted]		CF 5327 HF	0.	0.	30.	*	0.	0.	30.
03-30	DF	[redacted]		CF 0287 HX	0.	0.	19.	*	0.	0.	26.
03-31	DF	[redacted]		MARBELLA 0025SU	11.	4.5	30.	*	0.	0.	30.
03-32	DF	[redacted]		CORLIS CF1435JA	8.	0.	27.	*	0.	0.	30.
03-33	DF				0.	0.	0.	*	0.	0.	30.
03-34	DF	[redacted]		EAU CLAI 1179478	10.	2.	30.	*	0.	0.	30.
03-35	DF				0.	2.	0.	*	0.	0.	30.
03-36	DF	[redacted]		JONQUIL 8840EL	8.	5.	26.	*	0.	0.	30.
03-37	DF				0.	5.	0.	*	0.	0.	30.
03-38	DF	[redacted]		Y NOTC				*	0.	0.	30.
03-39	DF	[redacted]		CF 7310 HX	6.	24.	25.	*	0.	0.	30.
03-40	DF	[redacted]		Y NOTC				*	0.	0.	30.
03-41	DF				0.	2.	0.	*	0.	0.	30.
03-42	DF	[redacted]		GRECIAN CF 5689 JU	11.	3.	30.	*	0.	0.	30.
03-43	DF				0.	3.	0.	*	0.	0.	30.
03-44	DF	[redacted]		DIRTY MA CF 1475 FJ	0.	0.	27.	*	0.	0.	30.
03-45	DF	[redacted]		ANDROMED CF 9354 GE	7.	4.5	28.	*	0.	0.	30.
03-46	DF	[redacted]		BLUGENES CF 1708 FF	0.	0.	27.	*	0.	0.	30.
03-47	DF	[redacted]		LINSEY F CF3849EW	8.	0.	26.	*	0.	0.	30.
03-48	DF	[redacted]		NINA 2396GE	8.	4.	27.	*	0.	0.	30.
03-49	DF				0.	4.	0.	*	0.	0.	30.
03-50	DF	[redacted]		5100HM	0.	0.	27.5	*	0.	0.	30.
03-51	DF	[redacted]		CF 2878 EN	0.	0.	29.	*	0.	0.	30.
03-52	DF	[redacted]		ATLANTIS CF 9793 ST	10.	5.	30.	*	0.	0.	30.
03-ETE	ET	[redacted]		SUMMERLA 1123132	14.	3.	50.	*	0.	0.	30.
03-ETW	ET	[redacted]			0.	0.	50.	*	0.	0.	30.
04-01	DF	[redacted]		3146EC	0.	0.	26.	*	0.	0.	30.
04-02	DF	[redacted]		SS NICA CF 6952 KH	0.	0.	26.	*	0.	0.	30.
04-02	DF	[redacted]		Y NOTC				*	0.	0.	30.
04-03	DF				0.	0.	0.	*	0.	0.	30.
04-04	DF	[redacted]		270SDA-1 CF819IKZ	9.2	0.	29.5	*	0.	0.	30.
04-05	DF	[redacted]		Y NOTC				*	0.	0.	30.
04-06	DF	[redacted]		Y NOTC YR IN ADV 04/06				*	0.	0.	30.
04-07	DF	[redacted]		N/A CF 0581	9.3	0.	27.	*	0.	0.	30.
04-08	DF	[redacted]		BOOTY CA 3575TM	8.	2.5	30.	*	0.	0.	30.
04-09	DF				0.	2.5	0.	*	0.	0.	30.
04-10	DF	[redacted]		SLOOP CF 4466 EA	0.	4.	26.	*	0.	0.	30.
04-11	DF	[redacted]		FAMILY V 2761HL	10.	5.	30.	*	0.	0.	30.
04-12	DF	[redacted]		OSPREY CF 6738 KN	11.	5.5	28.	*	0.	0.	30.
04-13	DF	[redacted]		NICE CF 4065 HE	6.6	3.5	26.	*	0.	0.	30.

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04-14	DF			MOOD SWI 7607 GY	8.	0.	25.	*	0.	0.	30.
04-15	DF			Y NOTC 7/20/14				*	0.	0.	30.
04-16	DF			CF 4344 GF	11.	3.	29.	*	0.	0.	30.
04-17	DF				0.	3.	0.	*	0.	0.	30.
04-18	DF			CF 3172 GH	8.	3.	24.	*	0.	0.	30.
04-19	DF				0.	3.	0.	*	0.	0.	30.
04-20	DF				0.	3.	0.	*	0.	0.	30.
04-21	DF			Y NOTC				*	0.	0.	30.
04-22	DF			LUCY CF 9662 KR	9.	5.	30.	*	0.	0.	30.
04-23	DF				0.	5.	0.	*	0.	0.	30.
04-24	DF			OH YES! 937665	10.8	4.8	30.	*	0.	0.	30.
04-25	DF			CF 2892 KB	0.	0.	22.	*	0.	0.	30.
04-26	DF			CF 7570 JC	0.	0.	28.	*	0.	0.	30.
04-27	DF				0.	0.	0.	*	0.	0.	30.
04-28	DF			NONE CF 9148 EU	10.5	6.	30.	*	0.	0.	30.
04-29	DF			TRACHELL CF 3489 SX	0.	0.	28.	*	0.	0.	30.
04-30	DF			CF 3117 PV	8.1	2.1	22.	*	0.	0.	24.
04-31	DF				0.	2.1	0.	*	0.	0.	30.
04-32	DF			STILL FL CF 8283 FB	11.6	2.6	31.	*	0.	0.	30.
04-33	DF				0.	2.6	0.	*	0.	0.	30.
04-34	DF			CF 1793 FF	8.	4.	27.	*	0.	0.	30.
04-35	DF			TRIPLE T CF 8567 GT	8.	3.6	24.	*	0.	0.	30.
04-36	DF			CF 4998 GC	0.	0.	30.	*	0.	0.	30.
04-37	DF				0.	0.	0.	*	0.	0.	30.
04-38	DF			CHRISTIN CF 9106 EZ	12.	4.7	27.	*	0.	0.	30.
04-39	DF				0.	4.7	0.	*	0.	0.	30.
04-40	DF			CF 4389 SB	0.	0.	28.	*	0.	0.	30.
04-41	DF			1034FT	10.	0.	27.	*	0.	0.	30.
04-42	DF			CF 2417 JH	8.6	3.6	26.	*	0.	0.	30.
04-43	DF				0.	3.6	0.	*	0.	0.	30.
04-44	DF				0.	3.6	0.	*	0.	0.	30.
04-45	DF			NONE CF 0530 GK	0.	0.	27.	*	0.	0.	30.
04-46	DF			CF 9732 ST	8.6	3.	24.6	*	0.	0.	30.
04-47	DF			CF 9101 EZ	0.	0.	30.	*	0.	0.	30.
04-48	DF			7423SL	9.	1.	28.	*	0.	0.	30.
04-49	DF				0.	1.	0.	*	0.	0.	30.
04-50	DF			CF 7156 FD	10.	5.	30.	*	0.	0.	30.
04-51	DF				0.	5.	0.	*	0.	0.	30.
04-52	DF			CARMELA 0446UB	9.	4.5	27.	*	0.	0.	30.
04-53	DF				0.	4.5	0.	*	0.	0.	30.
04-54	DF			CF 4402 FH	8.5	0.	27.	*	0.	0.	30.
04-ETE	ET			PICKLE Y CF 5639 KU	0.	0.	55.	*	0.	0.	30.
04-ETW	ET				0.	0.	0.	*	0.	0.	30.
05-01	DF			CF 6245 GP	0.	0.	36.	*	0.	0.	36.
05-02	DF			HIATUS 9900VF	11.	4.7	35.2	*	0.	0.	36.
05-03	DF				0.	4.7	0.	*	0.	0.	36.
05-04	DF			ALISON D 2999 ET	10.	6.	34.	*	0.	0.	36.
05-05	DF			CF 3974 BX	11.6	2.5	33.	*	0.	0.	36.
05-06	DF			PAKELE CF 2417 GK	9.5	5.	33.	*	0.	0.	36.
05-07	DF			LIBERTY CF3217EV	12.	0.	31.	*	0.	0.	36.
05-08	DF			LITTLE U 4360841177	0.	0.	36.	*	0.	0.	36.

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VACANCY / OCCUPANCY INVENTORY SPACE ORDER

(STATUS L, Y = VACANT; TEMP. OUT INCLUDED, NOT COUNTED VACANT)
Group: ALL ALL DATES

SPACE		TENANT	REC #	BOAT	BOAT BEAM	BOAT DRAW	BOAT LNTH	*	SPACE WDTH	SPACE DPTH	SPACE LNTH
05-09	DF				0.	0.	0.	*	0.	0.	36.
05-10	DF	[redacted]	[redacted]	FAT CAT 959745	13.	3.4	36.	*	0.	0.	36.
05-11	DF			LITTLE B CF 4287 GF	12.6	3.	36.	*	0.	0.	36.
05-12	DF			CONTAGIO 1193318	0.	0.	36.	*	0.	0.	36.
05-13	DF			CRAZY FO 993209	10.	5.6	33.7	*	0.	0.	36.
05-14	DF			FIVE O'C CF 1593 FL	12.	3.	36.	*	0.	0.	36.
05-15	DF			REINELL CF 1235 GA	0.	0.	30.	*	0.	0.	36.
05-16	DF			LORELEI 653637	11.	4.	35.	*	0.	0.	36.
05-17	DF			CF 0329 CN	14.	4.	36.	*	0.	0.	36.
05-18	DF			WILDCAT 530808	0.	0.	32.5	*	0.	0.	36.
05-19	DF				0.	0.	0.	*	0.	0.	36.
05-20	DF	[redacted]	[redacted]	FLYING D CF 5437 FM	0.	0.	33.	*	0.	0.	36.
05-21	DF			K-2 989340	13.	3.	36.	*	0.	0.	36.
05-22	DF			LOVE LAD CF 3369 KK	12.	3.	36.	*	0.	0.	36.
05-23	DF				0.	3.	0.	*	0.	0.	36.
05-24	DF	[redacted]	[redacted]	CF 6856 GY	12.	3.6	33.	*	0.	0.	36.
05-25	DF			CF 4142 UL	12.	0.	33.	*	0.	0.	36.
05-26	DF			JEANNEAU 162015T	0.	0.	32.	*	0.	0.	30.
05-27	DF				0.	0.	0.	*	0.	0.	36.
05-28	DF	[redacted]	[redacted]	ZIG ZAG 606622	10.	8.	36.	*	0.	0.	36.
05-29	DF			PUFFIN CF 2740 EA	0.	0.	36.	*	0.	0.	36.
05-30	DF			STARGAZE 944768	10.	4.	33.5	*	0.	0.	36.
05-31	DF			CF 6237 TF	0.	0.	0.	*	0.	0.	36.
05-32	DF			SUZANNE 961001	9.9	4.9	33.	*	0.	0.	36.
05-33	DF			AVANTI CF 9145 JR	13.	3.6	34.	*	0.	0.	36.
05-34	DF			IO CF 1945 SE	12.	5.6	35.	*	0.	0.	36.
05-35	DF			CHARMED CF 0786 SS	11.6	6.	32.	*	0.	0.	36.
05-36	DF			CHRONOS 1226688	0.	0.	33.	*	0.	0.	36.
05-37	DF				0.	0.	0.	*	0.	0.	36.
05-38	DF	[redacted]	[redacted]	DANISH P CF 6993 KH	11.	3.	32.	*	0.	0.	36.
05-39	DF				0.	3.	0.	*	0.	0.	36.
05-40	DF	[redacted]	[redacted]	SAMUDRA 670353	11.	7.	35.	*	0.	0.	36.
05-41	DF				0.	7.	0.	*	0.	0.	36.
05-42	DF	[redacted]	[redacted]	SEA OTTE 707051	11.5	4.5	32.	*	0.	0.	36.
05-43	DF			WILD DOL 7701GY	11.	0.	32.	*	0.	0.	36.
05-44	DF			CTO II CF 4274JR	11.	2.8	33.	*	0.	0.	36.
05-45	DF			CF 3688 GK	0.	0.	34.	*	0.	0.	36.
05-46	DF			6278GL	0.	0.	33.	*	0.	0.	36.
05-47	DF			PAPA BAY CF 1890 GS	0.	0.	0.	*	0.	0.	36.
05-48	DF			BELLATOR 1148964	12.4	32.	36.	*	0.	0.	36.
05-ETE	ET			RED CHIL 1074810	15.	4.	50.	*	0.	0.	36.
05-ETW	ET			SUR04712M	6.	0.	16.	*	0.	0.	36.
06-01	DF			ALLURE CF 7314 PW	0.	0.	24.	*	0.	0.	36.
06-02	DF			BLUE EAG CF 9497 TM	0.	0.	26.	*	0.	0.	30.
06-03	DF			MISS B H CF 4274 NZ	4.	0.	30.	*	0.	0.	36.
06-04	DF			5160VB	0.	0.	30.	*	0.	0.	30.
06-05	DF				0.	0.	0.	*	0.	0.	36.
06-06	DF	[redacted]	[redacted]	SEA YEAH CF 3707 FS	0.	0.	28.	*	0.	0.	30.
06-07	DF				0.	0.	0.	*	0.	0.	36.
06-08	DF	[redacted]	[redacted]	TAIN 1039513	11.9	3.6	33.6	*	0.	0.	36.
06-09	DF				0.	3.6	0.	*	0.	0.	36.

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Group: ALL ALL DATES

SPACE		TENANT	REC #	BOAT	BEAM	BOAT DRAW	LNTH	*	SPACE WDTH	SPACE DPTH	SPACE LNTH
06-10	DF	[redacted]	[redacted]	FRESH ST 1064379	12.	36.	34.	*	0.	0.	36.
06-11	DF			I'LL BE 3851SJ	0.	0.	33.	*	0.	0.	36.
06-12	DF			BIKINI 1062015	14.	6.	42.	*	0.	0.	45.
06-13	DF			CF 4077 GK	0.	0.	31.	*	0.	0.	36.
06-14	DF			QUIXOTE 1168473	12.5	8.	40.	*	0.	0.	45.
06-15	DF				0.	8.	0.	*	0.	0.	36.
06-16	DF	[redacted]	[redacted]	NESHAMA 1083792	13.5	3.5	40.	*	0.	0.	45.
06-17	DF			CF 5233 GF	9.	4.	36.	*	0.	0.	36.
06-18	DF			TAXING T 1021915	13.5	6.1	43.	*	0.	0.	45.
06-19	DF			CF 1085 FY	14.5	3.	31.	*	0.	0.	36.
06-20	DF			DESTINY 999176	14.5	4.	42.	*	0.	0.	45.
06-21	DF			COOKIE CF1651CV	0.	0.	36.	*	0.	0.	36.
06-22	DF			TRUANT CF 2401 JA	12.	4.5	38.	*	0.	0.	45.
06-23	DF			MARY A 6046JC	11.6	2.1	32.	*	0.	0.	36.
06-24	DF				0.	2.1	0.	*	0.	0.	45.
06-25	DF	[redacted]	[redacted]	VOCALISE OR 569US	0.	0.	32.	*	0.	0.	36.
06-26	DF			ST. FRAN 921306	12.	6.	36.	*	16.5	0.	36.
06-27	DF			CALYPSO 1191203	12.	6.	36.	*	0.	0.	36.
06-28	DF			CHARDONN 512251	14.	6.2	41.	*	0.	0.	45.
06-29	DF			NUNA 1043220	11.5	6.	36.	*	0.	0.	36.
06-30	DF			WINDSONG 619625	12.	0.	38.	*	0.	0.	45.
06-31	DF			CF 4209 GA	9.7	4.9	31.7	*	0.	0.	36.
06-32	DF			KAHALA CF 6212 GK	12.4	7.	43.9	*	0.	0.	45.
06-33	DF				0.	7.	0.	*	0.	0.	36.
06-34	DF	[redacted]	[redacted]	STARSHAD 1169189	11.9	6.	39.	*	16.5	0.	45.
06-35	DF			CF 1234 GP	11.5	3.	31.	*	0.	0.	36.
06-36	DF			ANNITA 958601	12.	5.8	45.	*	0.	0.	45.
06-37	DF			CF 8988 GY	11.	3.	36.	*	0.	0.	36.
06-38	DF			RANNIE 6491TP	12.	6.	39.	*	0.	0.	45.
06-39	DF				0.	6.	0.	*	0.	0.	36.
06-40	DF	[redacted]	[redacted]	Y NOTC				*	0.	0.	45.
06-41	DF				0.	4.5	0.	*	0.	0.	36.
06-42	DF	[redacted]	[redacted]	SHAKINA 656478	0.	6.	41.5	*	0.	0.	45.
06-43	DF			KIND OF 1133959	0.	0.	34.	*	0.	0.	36.
06-44	DF			LAURIE 997882	12.4	2.7	36.	*	0.	0.	45.
06-45	DF			Gypsy Ro 13K77564	11.	5.	35.	*	0.	0.	36.
06-46	DF			CF 1795 CC	0.	0.	40.	*	16.5	0.	45.
06-47	DF			JUBILEE CF 4937 HE	12.	4.5	36.	*	0.	0.	36.
06-AS1	SIDETI				0.	4.5	0.	*	0.	0.	26.
06-ETE	ET	[redacted]	[redacted]		0.	0.	0.	*	0.	0.	45.
06-ETW	ET			VILLA KI 602262	0.	0.	45.	*	0.	0.	36.

GROUP 0

UNOCCUPIED FOOTAGE:	2,123.0	**UNOCCUPIED SPACES:**	66
OCCUPIED FOOTAGE:	7,401.0	**OCCUPIED SPACES:**	228
TOTAL FOOTAGE:	9,524.0	**TOTAL SPACES:**	294

11-01	DF	PATROL, H	3988		0.	0.	0.	*	0.	0.	45.
11-02	DF	PATROL, H	3983		0.	0.	0.	*	0.	0.	40.

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SPACE		TENANT	REC #	BOAT	BOAT BEAM	BOAT DRAW	BOAT LNTH	*	SPACE WDTH	SPACE DPTH	SPACE LNTH
11-03	DF	[redacted]	[redacted]		0.	0.	0.	*	0.	0.	45.
11-04	DF			CF 9167 GC	0.	2.5	38.	*	0.	0.	40.
11-05	DF				0.	0.	0.	*	0.	0.	45.
11-06	DF			SOPHIE I 1216019	12.	5.5	36.	*	0.	0.	40.
11-07	DF			TATANKA 5141 HS	13.	3.5	36.	*	0.	0.	45.
11-08	DF			DEBADO 8742NC	0.	0.	30.	*	0.	0.	40.
11-09	SF			CAROLINA 1061694	14.9	3.	50.	*	0.	0.	50.
11-10	DF			MTNEST	14.	4.5	45.	*	0.	0.	45.
11-11	SF			CASPIAN 1225968	20.8	10.2	85.	*	0.	0.	45.
11-12	DF			WHAT A W 1060946	0.	0.	43.	*	0.	0.	45.
11-13	SF				0.	0.	0.	*	0.	0.	45.
11-14	DF	[redacted]	[redacted]	FUELIN A 978694	0.	0.	0.	*	0.	0.	45.
11-15	SF				0.	0.	0.	*	0.	0.	45.
11-16	DF				0.	0.	0.	*	0.	0.	45.
11-17	SF				0.	0.	0.	*	0.	0.	45.
11-18	DF			NEW JACK 996385	0.	0.	38.	*	0.	0.	45.
11-19	SF			BLUE STE 70464	16.	0.	80.	*	0.	0.	45.
11-20	DF			VIN SANT 1101347	12.5	5.	38.	*	0.	0.	45.
11-21	SF				0.	0.	0.	*	0.	0.	45.
11-22	DF			PASSION 981361	0.	0.	45.	*	0.	0.	45.
11-24	DF			HONEYMOO 1058026	13.	5.	46.	*	0.	0.	45.
11-26	DF			YELLOW J CF6463UF	8.	4.2	27.	*	0.	0.	45.
11-28	DF			DANSER N 647073	11.	9.	42.	*	0.	0.	45.
11-30	DF			NEPTUNUS 1114842	11.9	0.	33.	*	0.	0.	45.
11-32	DF			BAND OF 0593SL	14.	6.	43.	*	0.	0.	45.
11-34	DF			PERRO RO 1049810	14.	3.	42.	*	0.	0.	45.
11-36	DF			KOOKABUR CF 0994 SB	13.	3.	40.	*	0.	0.	45.
11-38	DF			SANCTUAR CF 4046 GG	11.8	3.	31.	*	0.	0.	45.
11-40	DF			LIBERTIN 1119790	11.2	9.	36.	*	0.	0.	45.
11-42	DF			HMS BEAG 918929	0.	0.	50.	*	0.	0.	50.
11-44	SF				0.	0.	0.	*	0.	0.	36.
12-01	SF			CF 1969 RR	0.	0.	12.5	*	0.	0.	16.
12-02	SF				0.	0.	0.	*	0.	0.	16.
12-03	SF				0.	0.	0.	*	0.	0.	36.
12-04	SF			CF 5802 EF	16.	3.	28.	*	0.	0.	36.
12-05	SF				0.	0.	0.	*	0.	0.	36.
12-06	SF			NIKKI NI CF 7286 FX	0.	0.	35.	*	0.	0.	36.
12-07	SF				0.	0.	0.	*	0.	0.	36.
12-08	SF			MOON RAC CF 4671 FV	10.	5.	36.	*	0.	0.	36.
12-09	SF			MERRYWIN CF 8727 EJ	7.6	4.	26.	*	0.	0.	36.
12-10	SF			SANDPIPE CF 0972 CM	10.	3.5	35.1	*	0.	0.	36.
12-11	SF			LOST LOV CF 8972 CG	8.9	4.	27.	*	0.	0.	36.
12-12	SF			ARACURAS CF 4716 EC	10.	0.	33.	*	0.	0.	36.
12-13	SF			SEA CLOU 9511GD	0.	0.	35.	*	0.	0.	36.
12-14	SF			Y NOTC				*	0.	0.	36.
12-15	SF			7919SG	0.	0.	32.	*	0.	0.	36.
12-16	SF			1170EH	0.	0.	30.	*	0.	0.	36.
12-17	SF			YESTERDA CF 7121 SL	10.	5.	30.	*	0.	0.	36.
12-18	SF			NONE CF9953SX	10.	5.	34.	*	0.	0.	36.
12-19	SF			KEY LARG 941229	0.	0.	36.	*	0.	0.	36.
12-20	SF			HOOKED U CF 0443 VP	0.	0.	26.	*	0.	0.	36.

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Group: ALL ALL DATES

SPACE		TENANT	REC #	BOAT	BEAM	BOAT DRAW	LNTH	*	SPACE WDTH	SPACE DPTH	SPACE LNTH
12-21	SF				0.	0.	0.	*	0.	0.	36.
12-22	SF			QUAY LIN CF7445FX	13.	3.5	32.	*	0.	0.	36.
12-23	SF			BETTE MA 1789GP	0.	0.	26.	*	0.	0.	36.
12-24	SF			MITSOU 1036187	11.9	5.7	36.	*	0.	0.	36.
12-25	SF			CF 6844 HY	0.	0.	41.	*	0.	0.	45.
12-26	SF			KISMET CF 0315 KY	10.3	0.	33.6	*	0.	0.	45.
12-27	DF			CF 6243 GK	14.	18.	43.	*	16.5	0.	45.
12-28	DF			LA DONNA 8065TU	11.	4.5	36.	*	16.5	0.	45.
12-29	DF			THE NINA 948310	14.	3.	37.5	*	16.5	0.	45.
12-30	DF			SIMPATIC 903264	0.	0.	44.	*	16.5	0.	45.
12-31	DF			GREAT AT CF1132GL	0.	0.	43.	*	16.5	0.	45.
12-32	DF			BINDI 691604	12.	6.	39.	*	16.5	0.	45.
12-33	DF			2486SC	0.	0.	42.	*	16.5	0.	45.
12-34	DF			SOLTARA 972852	12.	6.	42.	*	16.5	0.	45.
12-34	DF			MACPAC 966105	12.	5.5	38.	*	16.5	0.	45.
12-35	DF			949584	0.	0.	42.	*	16.5	0.	45.
12-36	DF				0.	0.	0.	*	16.5	0.	45.
12-37	DF			WHISKEY CF 7784 HG	12.	3.	42.	*	16.5	0.	45.
12-38	SF			ALAMAR 2927HN	12.	3.	45.	*	16.5	0.	45.
12-39	DF				0.	3.	0.	*	14.5	0.	45.
12-40	SF				0.	3.	0.	*	14.5	0.	45.
12-41	DF				0.	3.	0.	*	14.5	0.	45.
12-42	DF			REDOUBT CF 5465 GS	13.5	7.	38.	*	14.5	0.	45.
12-44	DF			WOLVES O 570271	15.	0.	44.	*	0.	0.	45.
12-46	DF			SEA TURT 902425	15.	4.	46.	*	0.	0.	45.
13-01	SF				0.	0.	0.	*	17.5	0.	50.
13-02	SF				0.	0.	0.	*	17.5	0.	40.
13-03	DF				0.	0.	0.	*	17.5	0.	50.
13-04	DF				0.	0.	0.	*	17.5	0.	60.
13-05	DF				0.	0.	0.	*	17.5	0.	50.
13-06	DF			BRENDA J 6520HZ	16.	4.	46.	*	17.5	0.	60.
13-07	DF				0.	4.	0.	*	17.5	0.	50.
13-08	DF			LIGHTHEA 588233	12.	0.	45.	*	17.5	0.	60.
13-09	DF			WILD SOU 1056779	11.2	6.	39.	*	17.5	0.	50.
13-10	DF			958372	0.	0.	51.	*	17.5	0.	55.
13-11	DF				0.	0.	0.	*	17.5	0.	50.
13-12	DF				0.	0.	0.	*	17.5	0.	60.
13-13	DF				0.	0.	0.	*	17.5	0.	50.
13-14	DF			WHISTLE 654458	0.	8.5	55.	*	17.5	0.	60.
13-15	DF			PANTERA	0.	0.	48.	*	17.5	0.	50.
13-16	DF			JAVA SEA 650865	0.	0.	50.	*	17.5	0.	60.
13-17	DF				0.	0.	0.	*	17.5	0.	50.
13-18	DF				0.	0.	0.	*	17.5	0.	60.
13-19	DF			9326KJ	0.	0.	43.	*	17.5	0.	50.
13-20	DF			FAYAWAY 560696	12.5	4.5	41.	*	17.5	0.	60.
13-21	DF				0.	4.5	0.	*	17.5	0.	50.
13-22	DF			MISS TIF 587268	0.	0.	57.	*	17.5	0.	60.
13-23	DF			GOLDEN P CF 9908 ST	12.	3.	39.6	*	17.5	0.	50.
13-24	DF			Y NOTC				*	17.5	0.	60.
13-25	DF			TRITONS 1134715	14.	6.	42.	*	16.5	0.	50.
13-26	DF				0.	6.	0.	*	16.5	0.	60.

If doing current report, Non/Guests with date out of 11/17/16 per Hot Berth Inventory shown with date out for 11/18/16 for vacancy purposes

VACANCY / OCCUPANCY INVENTORY SPACE ORDER

(STATUS L, Y = VACANT; TEMP. OUT INCLUDED, NOT COUNTED VACANT)
Group: ALL ALL DATES

SPACE		TENANT	REC #	BOAT	BEAM	BOAT DRAW	LNTH	*	SPACE WDTH	SPACE DPTH	SPACE LNTH
13-27	DF	[redacted]	[redacted]	RETRIEVE 1076750	14.	4.	50.	*	16.5	0.	50.
13-28	DF			GEANI 645091	0.	0.	0.	*	16.5	0.	60.
13-29	DF				0.	0.	0.	*	16.5	0.	50.
13-30	DF	[redacted]	[redacted]	CF 0231 5Y	0.	0.	40.	*	16.5	0.	60.
13-31	DF			ANNABELL 2152VB	0.	0.	41.	*	16.5	0.	50.
13-32	DF				0.	0.	0.	*	16.5	0.	60.
13-33	DF	[redacted]	[redacted]	SEALUTIO 540575	15.	5.	47.	*	16.5	0.	50.
13-34	DF			BLUE CHA	16.	4.	54.	*	16.5	0.	60.
13-36	DF			WATER DO 1137080	18.	5.3	58.	*	16.5	0.	60.
13-38	DF			ODYSSEY	0.	0.	60.	*	16.5	0.	60.
13-40	DF			GYPSY J 976792	14.9	6.5	50.	*	16.5	0.	60.
14-01	SF				0.	0.	0.	*	16.5	0.	30.
14-03	DF				0.	0.	0.	*	19.5	0.	30.
14-05	DF			PATRIARC 1790GT	11.	6.5	40.	*	20.5	0.	40.
14-07	SF			WAADSEE CF 6887 SL	6.	3.	36.	*	19.	0.	40.
14-09	SF			ZEPHER 1248986	14.	5.	33.	*	19.	0.	60.
14-11	DF			THREE SE 931856	12.	5.6	37.	*	19.	0.	60.
14-13	DF				0.	5.6	0.	*	19.	0.	60.
14-15	DF				0.	5.6	0.	*	19.	0.	60.
14-17	DF				0.	5.6	0.	*	19.	0.	60.
14-19	DF				0.	5.6	0.	*	19.	0.	60.
14-21	DF	[redacted]	[redacted]	JUNO 666176	0.	0.	54.	*	19.	0.	60.
14-23	DF				0.	0.	0.	*	19.	0.	60.
14-25	DF	[redacted]	[redacted]	CF 3049 GE	15.8	3.	55.	*	19.	0.	60.
14-27	DF				0.	3.	0.	*	19.	0.	60.
14-29	DF				0.	3.	0.	*	19.	0.	60.
14-31	DF				0.	3.	0.	*	19.	0.	60.
14-33	DF	[redacted]	[redacted]	VIDA MIA 251106	16.	5.8	60.	*	19.	0.	60.
14-35	DF				0.	5.8	0.	*	19.	0.	60.
14-37	DF	[redacted]	[redacted]	SEASCAPE 1203849	14.	3.	50.	*	19.	0.	60.
14-39	DF				0.	3.	0.	*	19.	0.	60.

GROUP 1

UNOCCUPIED FOOTAGE:	1,768.0	**UNOCCUPIED SPACES:**	34
OCCUPIED FOOTAGE:	4,547.0	**OCCUPIED SPACES:**	100
TOTAL FOOTAGE:	6,315.0	**TOTAL SPACES:**	134

CAP-01	[redacted]				0.	0.	0.	*	0.	0.	0.
CAP-02					0.	0.	0.	*	0.	0.	0.
CAP-03					0.	0.	0.	*	0.	0.	0.
CAP-04					0.	0.	0.	*	0.	0.	0.
CAP-05					0.	0.	0.	*	0.	0.	0.

If doing current report, Non/Guests with date out of 11/17/16 per Hot Berth Inventory shown with date out for 11/18/16 for vacancy purposes

VACANCY / OCCUPANCY INVENTORY SPACE ORDER

(STATUS L, Y = VACANT; TEMP. OUT INCLUDED, NOT COUNTED VACANT)
Group: ALL ALL DATES

SPACE	TENANT	REC #	BOAT	BEAM	BOAT DRAW	* LNTH *	SPACE WDTH	SPACE DPTH	SPACE LNTH

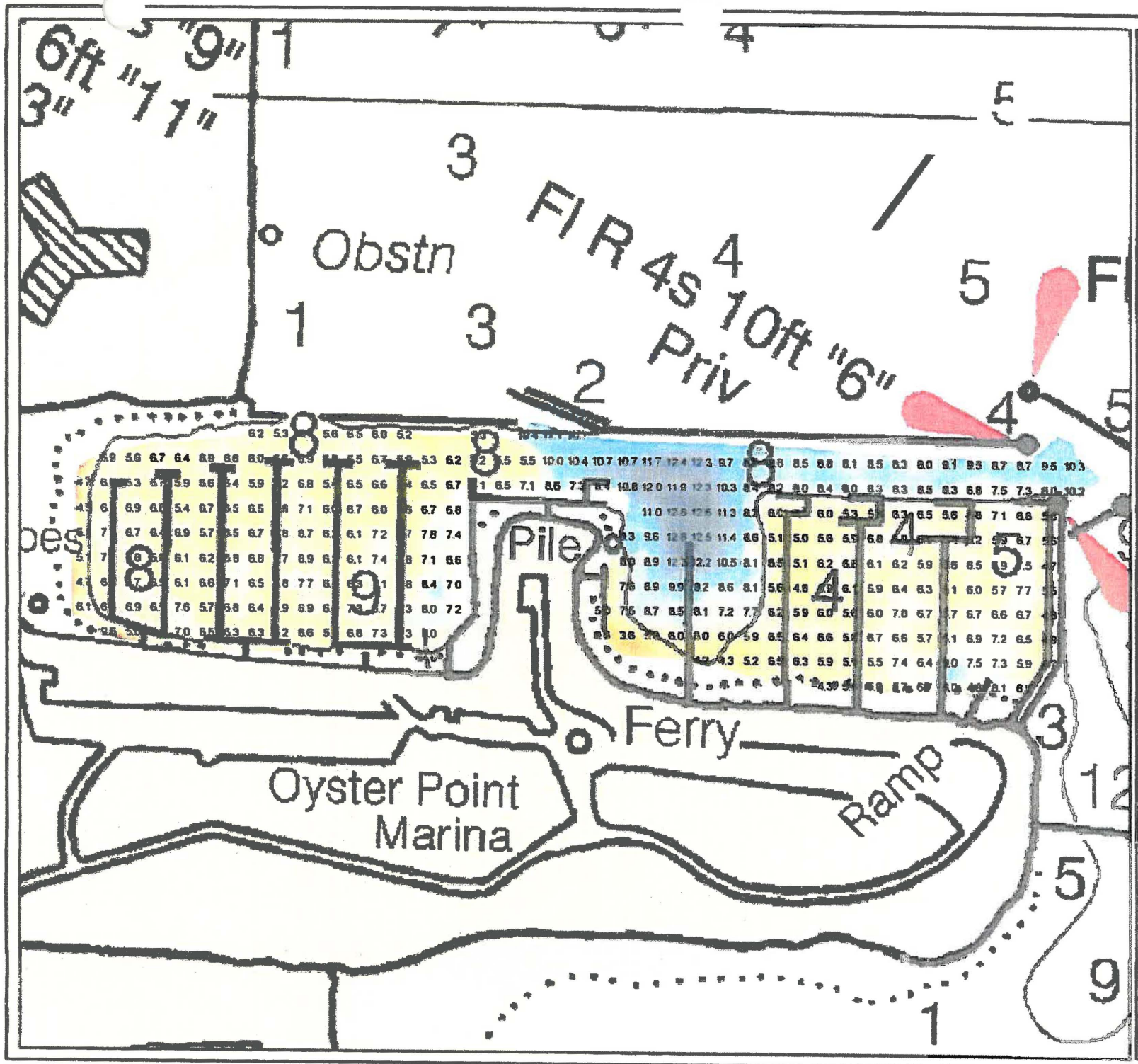
GROUP C

UNOCCUPIED FOOTAGE:	0.0	**UNOCCUPIED SPACES:**	4
OCCUPIED FOOTAGE:	0.0	**OCCUPIED SPACES:**	1
TOTAL FOOTAGE:	0.0	**TOTAL SPACES:**	5

TOTALS:

UNOCCUPIED FOOTAGE:	3,891.0	**UNOCCUPIED SPACES:**	104
OCCUPIED FOOTAGE:	11,948.0	OCCUPIED SPACES:	329
TOTAL FOOTAGE:	15,839.0	TOTAL SPACES:	~~433~~ 408 = 81%

390 ACCORDING TO 2014 M&N CONDITION SURVEY = 84%



CARAVEL

4117 West Rincon Avenue
Campbell, CA 95008

NOTES:
Sounding are in feet below MLLW

OYSTER POINT MARINA

SOUTH SAN FRANCISCO
CALIFORNIA

PRE-DREDGE SOUNDINGS

PROJECT NUMBER:

PROJECT ENGINEER: KI

DRAWN BY: NM

CHECKED BY: KI

SCALE: 1:3,800

DATE: August 26, 2016

Interpolated Depth (feet)

13

1

State Plane California III
FIPS 0403 Ft US

Vertical Datum: NAVD88

0 100 200 300 Feet

SHEET:

RING:

2016 Bay Area H. Group Marina Survey

Marina - 40'	Single Finger
San Francisco Marina - West	$15.98
Marina Village Yacht Harbor	$13.00
Santa Cruz Marina - South	$12.29
Santa Cruz Marina - North	$11.96
Emeryville Marina	$11.38
Ballena Isle Marina	**$11.00**
Berkeley Marina	$10.95
Oakland Yacht Club	$9.92
San Francisco Marina - East	$9.52
Average	**$9.41**
Oakland Marinas	$9.30
Fortman Marina	$9.25
Glen Cove Marina	$8.75
Oyster Point Marina	$8.00
Brisbane Marina	$7.28
Vallejo Municipal Marina	$7.00
Petaluma Marina	$6.88
Martinez Marina	$6.65
Napa Valley Marina	$6.51
Embarcadero Cove	$6.50
Pittsburg Marina	$6.03

Marina	Double Finger
Schoonmaker Point Marina	$17.63
Clipper Yacht Harbor	$16.87
San Francisco Marina - West	$15.98
Blue Water	$15.63
Pelican Harbor	$14.75
South Beach Harbor	$13.77
Santa Cruz Marina - South	$13.54
Marina Village Yacht Harbor	$13.00
Oakland Marinas	$12.20
Emeryville Marina	$12.13
Berkeley Marina	$12.04
Treasure Isle Yacht Harbor	$11.58
Pier 39 Marina	$11.50
Ballena Isle Marina	**$11.25**
Bair Island Marina	$11.00
Emery Cove Yacht Harbor	$10.95
Benicia Marina	$10.55
Brickyard Cove	$10.50
Average	**$10.28**
Marina Bay Yacht Harbor	$10.24
Grand Marina	$10.14
Alameda Marina	$10.00
San Francisco Marina - East	$9.52
Fortman Marina	$9.25
Westpoint Harbor	$9.00
Pillar Point	$8.98
Martinez Marina	$8.80
Glen Cove Marina	$8.75
Loch Lomand Marina	$8.75
Vallejo Municipal Marina	$8.60
San Leandro Marina	$8.42
Oyster Point Marina	$8.27
Port of Redwood City Marina	$8.25
Coyote Point Marina	$8.00
Oyster Cove Marina	$8.00
Embarcadero Cove	$7.50
Lowrie Yacht Harbor	$7.50
Antioch Marina	$7.25
Pittsburg Marina	$7.23
Richmond Yacht Club	$6.50
Aeolian Yacht Club	$6.19
Point San Pablo	$6.00
Suisun City Marina	$5.77

Marina	# of Slips
Aeolian Yacht Club	23
Alameda Marina	35
Antioch Marina	23
Bair Island Marina	25
Ballena Isle Marina	**67**
Benicia Marina	24
Berkeley Marina	79
Blue Water	17
Brickyard Cove	58
Brisbane Marina	57
Clipper Yacht Harbor	124
Coyote Point Marina	90
Embarcadero Cove	18
Emery Cove Yacht Harbor	167
Emeryville Marina	41
Fortman Marina	54
Glen Cove Marina	6
Grand Marina	49
Loch Lomand Marina	100
Lowrie Yacht Harbor	48
Marina Bay Yacht Harbor	119
Marina Village Yacht Harbor	124
Martinez Marina	48
Napa Valley Marina	15
Oakland Marinas	110
Oakland Yacht Club	23
Oyster Cove Marina	40
Oyster Point Marina	16
Pelican Harbor	42
Petaluma Marina	23
Pier 39 Marina	65
Pillar Point	64
Pittsburg Marina	123
Point San Pablo	57
Port of Redwood City Marina	11
Richmond Yacht Club	40
San Francisco Marina - West	104
San Francisco Marina - East	68
San Leandro Marina	90
Santa Cruz Marina - North	18
Santa Cruz Marina - South	90
Schoonmaker Point Marina	84
South Beach Harbor	92
Suisun City Marina	20
Treasure Isle Yacht Harbor	3
Vallejo Municipal Marina	104
Westpoint Harbor	77

Name of Marina					Aeolian Yacht Club			Alameda Marina			Antioch Marina			Bair Island Marina		
Contact					Nathan Johnson			Paul Houtz			James Pflueger			Ian Turner		
Email					nrj@nathanrjohnson.com			paul@alamedamarina.net			jpflueger@ci.antioch.ca.us			iturner@greatslips.com		
Contact Phone #					510-882-3402			$10 521 1133			925-779-6957			650-440-0230		
Slip Fees (per foot)	Averages Single Finger	Averages Double Finger	TTL Slips		Single Finger	Double Finger	# of Slips	Single Finger	Double Finger *	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
25'	$8.70	$8.79	1,880	10.62%		$6.19	18		$7.00	146	$5.75		42			
30'	$8.85	$9.20	5,381	30.40%		$6.19	20		$8.25	258	$5.75	$7.25	155		$10.50	22
35'	$8.74	$9.69	3,370	19.04%		$6.19	20		$9.50	74	$5.75	$7.25	48		$10.57	36
40'	$9.41	$10.28	2,775	15.68%		$6.19	23		$10.00	35		$7.25	23		$11.00	25
45'	$9.82	$10.36	1,492	8.43%		$6.19	4								$11.00	12
50'	$10.06	$10.84	1,142	6.45%		$6.19	4				$5.75	$7.25	9			
55'	$8.50	$10.49	287	1.62%												
60'	$9.96	$12.08	336	1.90%												
65'	$11.75	$10.75	71	0.40%												
70'	$14.21	$13.23	32	0.18%												
80'	$14.84	$14.88	21	0.12%												
Side Ties			588	3.32%		$6.19	10		$12.00	8	$5.75		19			
End Ties			326	1.84%		$6.19	4		$13.00	12	$5.75		4			
Total # of slips			17,701	100%			103			533			300			95
Occupancy - %					72%			79%			54%			99%		
Amenities																
Power - Billed separately (Yes/No)					$20 mo all slips			Yes			Yes			Yes		
Dock Box					Free			Owner must provide			$5.00 mo			Yes		
Water					Included			Included			Included			Yes		
Wifi					Free			No			Free			No		
Laundry					Yes, coin operated			Yes - coin operated/ LA Only			Coin Operated			Yes		
Other (please list)					Tools & workshops for club members			Bathrooms with showers								
Other Fees																
Live Aboard					$200			$5.00 per foot			$75.00			No		
Extended Stay								n/a			Regular slip rate/2 mo. Max			No		
Guest Rate/Daily					Reciprocity - 3 night s free the $15 night			n/a			$15-$25			$3 per foot per day		
Guest Rate/Weekly					$105			n/a			Daily rate			N/A		
Guest/Transient/Monthly					$450			n/a			Regular slip rate/2 mo. Max			N/A		
Deposit for Slip					None			1 month rent			1 month			1.5 x Slip Rate		
Live Aboard Wait List Fee					None			n/a			$50 - non-refundable			N/A		
Parking Fee					Guests $15/day after 3 days; Members - free			n/a			Free			N/A		
Other Amenities																
Fuel Dock Yes/No					No			no			Yes			No		
Boat Yard Yes/No					Yes			yes			No			No		
Yacht Club Yes/No					Yes			yes			No			No		
Houseboat Allowed Yes/No					No			no			No			No		
Dry Storage Available Yes/No					Yes			yes			No			No		
Storage Lockers Available Yes/No					Yes $50, $75 & $100 per year			no			No			No		
Launch Ramp Available Yes/No					No			Public ramp next to marina			Yes			No		
Launch Fee - Yes/No Amount					N/A			no			$5			No		
Boat Wash /Rinse Area - Open (Yes/No)					Yes			yes			No			No		
Boat Wash/Rinse Area - Contained (Yes/No)					No			no			No			No		
Pump-out available (Yes/No)					No			no			Yes			Yes		

Notes:

Ballena Isle Marina			Benicia Marina		Berkeley Marina			Blue Water			Brickyard Cove Marina			Brisbane Marina		
Risa Delatoria			Rhonda Imel		Brian Gavin			Christopher Lacey			Corey Claussen			Mike Hahn		
rdelatoria@shmarinas.com			beniciamarina@sbcglobal.net		gavin@cityofberkeley.info / marina@cityofberkeley.in			chris@bluewateryachtharbor.com			corey@bycmarina.com			harbormaster@ci.brisbane.ca.us		
510-523-5528			707-745-2628			510-981-6744			(415)-289-0135			510-236-1933			650-583-6975	
Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger *	# of Slips	Single Finger	Double Finger *	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
$8.00	112		$10.55	69	$9.76	$10.74	312		$ 12.40	36						
$9.00	96		$10.55	51	$10.34	$11.37	319		$ 13.83	8		$10.00	53	$7.28	$8.00	207
$10.25	66		$10.55	85	$10.34	$11.37	166		$ 15.00	10		$10.00	75	$7.49	$8.23	153
$11.25	67		$10.55	24	$10.95	$12.04	79		$ 15.63	17		$10.50	58	$7.28		57
$12.25	47	10.55	$10.55	45	$10.95	$12.04	45		$ 13.18	1		$10.50	10	$7.45	$8.18	59
$12.35	61		$10.55	6	$11.61	$12.77	75					$10.75	4	$7.28	$8.00	47
$12.45	16		$10.55	9								$10.75	4	$7.15		24
$13.00	15		$10.55	2	$12.33	$13.56	23							$7.28		5
$13.75	3				$12.33	$13.56	5	$ 16.92		2				$7.40		13
$14.00	3		$10.55	1												
					$13.81	$15.19	3									
	12							$ 11.00		3		$9.50	20			24
	12			15	$.50 per ft per night		50					$11.50	7			8
	510			307			1077			77			231			597
97.00%			75%		83%			100%			87%			80%		
Yes			Yes		50% yes / 50% no			Yes. Each slip separately metered			No			Yes		
Yes			Free		Yes			Yes. No additional charge			Yes			Yes		
Yes			Free		Included			Yes. No additional charge			Included			Yes		
Yes			No		Yes			Yes. No additional charge			Yes			Yes		
Yes			Liveaboards Only		Live Aboard Only			No			Yes			Yes		
Yacht Club, Sailing School					o, 1 free mobile pump out per month on us, 3 pumph			N/A			Rate schedule is different for new docks/old docks			Private Showers		
Propane Station/Restaurants											Numbers used above are an average					
$250 per month			$185.00		200 per month			$275/mo for 1st person. $100/mo for additional person			$3.00/per boat foot			N/A		
Pro-rate Slip Fees								N/A			N/A			N/A		
$1.00 per ft per day					$.50 per foot per night up to 10 days			N/A			$30			Up to 35' $25/night; 35-50' $.85/ft; 51-80' $1/ft		
$1.00 per ft per day					$.50 per foot per night up to 10 days			N/A			2 week intervals Pro-rate based on slip size			Prorated at monthly rate + elec		
N/A					10% added to base rate *see above			N/A			Same as regular berth			Monthly rate + elec		
month plus: $50<32'; + $100 32-40'; + $150 45'			1 month		equal to 1 months rent			Equal to monthly slip fee			1 month			1 month + key deposit		
N/A			$40.00		N/A			N/A			$100 deposit			N/A		
N/A					Free Public Parking			N/A			None			N/A		
Yes			Yes		Yes *not operated by City of Berkeley			No			No			No		
No			No		Yes *not operated by City of Berkeley			No			No			No		
Yes			Yes		Yes *not operated by City of Berkeley			No			No			Yes		
No			No		No			Yes. We have two in the 65' slips			No			No		
No			No		Yes			No			Yes			No		
No			No		Yes			No			Yes			No		
No			Yes		Yes			No			No			No		
N/A			$5.00		Yes $15			No			No			No		
No					Yes			No			No			No		
N/A					No			No			No			No		
Yes			Yes		Yes			No			No			Yes		

See note above on old docks/new docks

Channel Marina			Clipper Yacht Harbor			Coyote Point Marina			Embarcadero Cove			Emery Cove Yacht Harbor			Emeryville Marina LLC		
Armando Romero			Eva Kanemoto			Ed Hallett			Raymond Bouchayer			Diane Isley			Michelle Shadows		
singha@channelprop.com			eva@clipperyacht.com			ehallett@smcgov.org			embarcaderocove@yahoo.com			diane@emerycove.com			emeryville@shmarinas.com		
510-233-2246			(415) 332-3500			650-573-2594			510-532-6683			510-428-0505			510-654-3716		
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
				$12.68	81		$6.87	56	$6.00		23				$10.40	$11.20	30
	$8.90	22		$14.00	178		$6.96	256	$6.00		54		$10.70	4	$10.50	$11.17	144
	$7.81	39		$15.28	67		$8.05	33	$6.00	$6.50	20		$10.95	114	$10.86	$11.71	38
				$16.87	124		$8.00	90	$6.50	$7.50	18		$10.95	167	$11.38	$12.13	41
							$9.44	12					$11.20	74	$11.56	$12.11	17
				$20.08	25					$7.50	1		$11.20	61	$11.50	$12.10	59
													$11.45	5			
				$21.03	20		$9.25	10		$7.50	1		$12.00	5	$11.50	$12.08	29
										$7.50	1				$12.08	$12.54	20
										$7.50	3				$12.14	$12.57	1
															$12.25	$12.44	1
$7.81		12		$10 - $16 per foot	69	$4.77		64							10.40 - 12.54	$-	51
				$10 -$16 per foot	12	$9.25		8							10.40 - 12.54	$-	11
		73			576			529			121			430			442
	72%			91%			78%			80%			100%			96%	
	no			Yes			No			No			Yes + $10.39 for PGE to provide pedastol			Yes	
	no			Yes			Yes			Yes			Yes			Yes - No additional Charge	
	yes			Yes			Yes			Yes			Included			Yes - No additional Charge	
	no			Yes			Yes			No			Yes			Yes - No additional Charge	
	no			Yes			No			No			Yes			Yes - Coin laundry $2.50/wash $2.50/dry	
										Showers/Bathrooms			waste oil/absorbent/filters = free disposal			Cable TV - No additional Charge	
	no			$300 - 1 person + $100 for each additional person			No			$140			$300			$225	
	no			N/A			No			No						N/A	
	no			Nightly Rate: $1/ft<50'; $2/ft 50+' (plus elec)			$.50 per foot per night			No			$40.00			$1.50/ft	
	no			N/A			$.50 per foot per night			No						Daily rate X 5	
	no			N/A			N/A			No			Same as monthly rate			Daily rate X 10	
	yes			1 month			No			1 month			1 month			$500 or 1 months slip fee	
	no			N/A			No			No			No			N/A	
	no			N/A			No			$50 month			No			N/A	
	no			Yes			Yes			No			adjacent marina			Yes	
	no			Yes			No			Yes			No			No	
	no			Yes			Yes			No			Yes			No	
	no			Yes			No			No			No			No	
	no			No			Limited			No			No			No	
	no			No			No			No			Yes $60 mo.			No	
	no			Yes			Yes			No			adjacent marina			Yes	
	no			No			$5.00			No			No			No	
	no			Yes (dry storage tenants only)			Yes			No			No			No	
	no			No			No			No			No			No	
	no			Yes			Yes			No			Yes			Yes	

Covered berths up to 32' = $285, ea. add'l linear foot is $8

Uncovered berths up to 32' =$250, ea. add'l linear foot is $8

39 total covered; 22 total uncovered

Fortman Marina			Glen Cove Marina			Grand Marina			Loch Lomand Marina			Lowrie Yacht Harbor			Marina Bay Yacht Harbor		
Mark Ruckman			Adam Leonard			Cheri Berggren			Pat Lopez			Roger/Lauren Preston			Stephen Orosz		
fortmanmarina@comcast.net			glencovemarina@gmail.com			cberggren@grandmarina.com			pat@lochlomondmarina.com			lowrieharbor@sbcglobal.net			sorosz@mbyachtharbor.com		
510-522-9080			707-552-3236			510-865-1200			415-454-7228			415-454-7595			510-236-1013		
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
$7.42	$7.42	35	$8.75		28					$8.75	10		$7.50	14		$9.38	77
$7.97	$7.97	220	$8.75		108		$8.64	110		$8.75	156		$7.50	24		$9.38	289
$8.53	$8.53	60	$8.75	$8.75	31		$9.77	105		$8.75	105					$9.95	135
$9.25	$9.25	54	$8.75	$8.75	6		$10.14	49		$8.75	100		$7.50	48		$10.24	119
$10.09	$10.09	40	$8.75	$8.75	24		$11.47	59		$8.75	69					$10.24	65
$10.14	$10.14	51					$11.73	40		$8.75	6		$7.50	9		$10.81	21
$10.00	$10.14	3	$8.75	$8.75	10					$8.75	6		$7.50	5		$10.81	34
$10.00	$10.00	23								$8.75	15					$10.81	9
																$11.64	1
			$8.15		9			7		$8.75	28				$10.98		32
								8		$9.50	17				$12.20		18
		486			216			378			512			100			800
	79%			83%			92%			67%			95%			72%	
Yes			Yes			Yes			Yes			Yes			Yes		
Yes			Yes			Yes			No			No			Yes		
Yes			Yes			Yes			No			Included			Yes		
No			Yes			Yes			No			No			Yes, free		
Yes L/A only			Yes, coin operated			Yes, live aboard only			No			No			Yes, two (2) coin operated		
			Glen Cove has covered slips. Rates												Ice , free two (2) locations		
			above reflect open slip rates.														
			Covered rates are higher.														
< 32 $6.25. ft; 33 > $5.80 ft			$225			$4 per foot			$300			High use Fee $300 over 2 nights per week			$200/mo. Includes P.O. Box		
N/A			N/A						N/A						n/a		
$25 Night			$1.00 per ft			$1/foot per night/minimum $30			$1/ft			$30 per day			ft/day under 75'; $1/ft/day 75'-100'; $1.50/ft/day ov		
PRO RATED MONTHLY RATE			$1.00 per ft			$5/ft			Per slip length			$30 per day X 7			n/a		
NORMAL MONTHLY RATE			N/A			Same as monthly			N/A			$7.50 per ft			n/a		
EQUAL TO 1 MONTH RENT			1 month			1 month			1 month			2 weeks			der 32'; $400 36'-42'; $500 44'-50'; $600 51'+; End Ti		
NO			N/A			None			None			No			$0		
NONE			Over 2 cars/$50 mo.			None			None			$100 per vehicle - extra vehicle fee			$0		
No			No			No			No			No			No		
No			No			Yes			No			No			No		
Yes			Yes			No			Yes			No			No		
No			Yes			No			No			No			NO!		
No			Yes			No			No			No			Dinghy only (16' or less)		
No			No			Yes			No			No			Yes		
No			No			Next Door			Yes			No			Yes		
No			N/A			No			Yes $20 or $350/yr			No			$10		
None			No			No			Yes			No			Yes		
N/A			No			No			No			No			? Ours drains to sewer, is that contained?		
Yes			Yes			Yes			Yes			No			Yes, two (2)		

Marina Plaza Harbor			Marina Village Yacht Harbor				Martinez Marina			Napa Valley Marina *			Oakland Marinas * See Note Below				Oakland Yacht Club	
Raul Carlos			ndra Coong, Mgr & Steve Meckfessel, Managing Inves				Olivia Ortega			Kirby Long			Mark L. Omel				Ben Yamanaka	
harbormaster@bergholdings.com			scoong@marinavillageharbor.com				oortega@martinez-marina.com			nvmkirby@yahoo.com			momel@oaklandmarinas.com				gm@oaklandyachtclub.com	
415-465-0230				510-521-0905				925-313-0942			707-252-8011			510-834-4591			510-522-6868	
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips		Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips		Single Finger	Double Finger	# of Slips
	$10.25	12	$10.35	$10.35	71		$5.60		24	$6.25		15		$8.00	70				
	$13.84	49	$10.33	$10.33	204		$5.70		87	$6.25	$7.93	84		$10.00	108		$8.20		105
	$16.51	31	$10.69	$10.69	156		$6.25	$8.14	80	$6.51	$7.93	25	$9.25	$12.00	105		$9.42		29
			$13.00	$13.00	124		$6.65	$8.80	48	$6.51		15	$9.30	$12.20	110		$9.92		23
	$18.15	5	$13.27	$13.27	76		$7.08	$9.15	23		$7.93	42	$9.35	$12.60	52		$10.55		23
			$13.58	$13.58	26									$12.90	35				
			$13.88	$13.88	17									$13.00	4				
			$14.24	$14.24	5									$13.60	4				
														$13.60	2				
														$13.90	3				
			$15.47	$15.47	6									$14.00	1				
													$14.75		20		$1.00		18
		6	$13.60 -16.00	$13.60 -16.00	12						$8.50		$14.75		10		$11.13		1
		103			697				262			181			524				199
100%			98%				45.00%			90%			67.10%				70%		
Yes			Yes				Yes			Yes			Yes				Yes	
Yes			No charge				$4 per month			Yes			Yes				Yes	
Yes			No charge				Yes			Included			Yes				Yes	
No			No charge				Air Cloud - Free			Yes			Yes				No	
No			Coin Operated				Yes			No			Yes				Yes	
			Self-serve free ice				Bait & Tackle Store						Restaurants					
							Martinez Yacht Club											
No			$350				Yes $200			$175			$220/$248 per month				$120.75 - 1 person + $36.75 each additional	
No guest slips			$250				N/A			$175			Pro-rate slip fees					
			Starting @$30.00				20'-30' - $18/35'-44' - $20/45'+ - $25			$.60/ft			$45/day				$1.00 per foot	
			N/A				N/A						$45/day				$7.00 per foot	
			Starting @$350				N/A			$7.50/ft			$45/day				N/A	
Equal to rent			Starting @$400				1 month			No			1 month + $50 32'and under; or + $100>32'				None	
No			No charge				Yes			No			N/A				None	
No			No charge				R.V. parking no hook up - $15.00 night /max 14 days			No			N/A				None	
No			No				No			Yes			Yes				No	
No			No				Eagle Marine			Yes			No				No	
No			Yes				Yes			No			No				Yes	
No			No				Yes			No			No				No	
No			No				No			Yes			No				No	
No			No				No			Yes			No				No	
No			No				Yes			Yes			No				No	
No			No				Yes - $10			Yes - $10.00			N/A				N/A	
No			No				Yes			No			No				No	
No			No				No			Yes			N/A				No	
Yes			Yes				Yes			Yes			Yes				No	

*** NVM has 124 covered slips 28'-45'**
All at $7.93 per foot

Oakland Marinas includes:
Jack London Square
North 1 Marina
North 2 Marina
Central Basin Marina
Union Pt Marina

	Oyster Cove Marina			Oyster Point Marina			Park Street Landing Marina			Pelican Harbor			Petaluma Marina			Pier 39 Marina	
	Tim Christopher			John Moren			Glenn & Michele Hansen			Janet Erickson			Barry & Binky Thorsson			Sheila Chandor	
	tchristopher@shorenstein.com			harbormaster@smharbor.com			hansenrig@sbcglobal.net			pelicanharbour@att.net			bthorsson@ci.petaluma.ca.us			info@pier39marina.com	
	650-952-5540			650-952-0808			510-521-7027			415-332-0723			707-778-4489			415-705-5436	
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
				$8.40	28							$5.96		17			
	$8.00	104	$7.70	$8.05	165		$8.00	11	$12.50		14	$6.88		42			
	$8.00	32	$7.95	$8.25	100		$8.00	13				$6.88		46		$11.34	133
	$8.00	40	$8.00	$8.27	16					$14.75	42	$6.88		23		$11.50	65
	$8.00	3	$7.93	$8.28	66							$6.88		25		$11.76	26
	$8.00	33	$7.98	$8.30	18					$16.50	16					$12.08	66
				$8.30	1		$8.00	1									
	$8.00	10	$7.96	$8.31	34					$16.75	14					$10.94	7
										$15.50	4						
		4					$8.00	1						8		$11.50	20
		9												6		$11.50	6
		235			428			26			90			167			323
	84%			72%			75%			94%			51%			88.00%	
	Yes			Yes			Yes			Yes			No			Yes	
	Free			Yes - $10/mo			Yes			Free			Yes			Yes	
	Free			No			Yes			Included			Included			Included	
	Free			No			No			N/A			NO, but available			No	
	Coin Operated			Yes			No			Coin ooperated laundry on-site			No			Yes	
	Self-serve free ice						Cable/phone									Tenant lounge/bathroom/showers	
	$200 mo			$350						$300			No live aboard			$200	
	$200 mo			N/A			No										
	$20			$.60 per ft/day									$24 per night			1-36'/$45; 37-45'/$50; 46-60'/$60	
	$140			N/A												1-36'/$45; 37-45'/$50; 46-60'/$60	
	Equal to slip rate for boat			N/A												1-36'/$45; 37-45'/$50; 46-60'/$60	
	1 month			1 month									1 month			2 months	
	None			$25.00			No			None			N/A			No	
	None			No			No			$75.00			None			Pay garage next to marina	
	No			Yes			No			No			Yes Gas/Diesel/Midgrade Fuels			No	
	No			Yes			No			No			No			No	
	No			Yes			No			No			At turning basin			No	
	Yes			No			No			No			No			No	
	No			Yes			No			No			No			No	
	No			No			No			No			No			No	
	No			Yes			No			No			Yes			No	
	N/A			Yes - $11/day			No			No			$5.00			No	
	No			Yes			No			No			Yes			No	
	No			No			No			No			No			No	
	Yes			Yes			Yes			Yes			Yes			Yes	

Pillar Point Harbor *			Pittsburg Marina			Point San Pablo			Port of Redwood City Marina			Redwood Landing Marina			Richardson Bay Marina		
John Moren			VAN DePIERO			Roslynn Johnson			Rich Ferrari			Rich Ferrari			Ken Watsey		
harbormaster@smharbor.com			VDEPIERO@CI.PITTSBURG.CA.US			ptsanpablo@hotmail.com			rich@spinnakersailing.com			rich@spinnakersailing.com			kwatsey@aol.com		
(650) 726-4382			925-439-4958			510-233-3224			(650) 363-1390			(650) 363-1390			(415) 332-5510		
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger *	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
			$6.03	$7.23	15		$6.00	7					$6.50	10	$12.25		60
	$9.19	82	$6.03	$7.23	82		$6.00	117		$7.25	77		$7.00	10	$12.25		110
	$9.08	74	$6.03	$7.23	155		$6.00	18	$7.50	$7.75	55		$8.00	10	$12.25		50
	$8.98	64	$6.03	$7.23	123		$6.00	57		$8.25	11						
	$9.04	49	$6.03	$7.23	88		$6.00	2		$8.25	1						
	$8.87	60	$7.23	$7.23	88		$6.00	4									
	$8.78	19															
	$8.85	21	$8.00	$8.00	1												
							$6.50	4									
							$6.50	1									
		9			10				$7.00		33	$9.00		6			
		16			13				$10.00		6	$9.00		3			
		394			575			210			183			39			220
99%			72%			31%			93%			50%			90%		
Yes			No			Yes			Yes			Yes			Yes		
No			no			No			Yes			No			Yes		
Yes			no			Yes			Yes			No			Yes		
Yes (very limited)			no			No			No			No			AT&T Uverse by customer		
Yes			yes			No			Yes			No					
			yes														
$350 per month			y			$200 mo			No			$300.00			$265.00 mo		
N/A			y			N/A			No			$200.00			N/A		
$.75/ft/day			y			$20 night			$.95/ft			$.85/ft per day			N/A		
N/A			y			N/A									N/A		
N/A			n			N/A			$14.25/ft per month			$12.00/ft per month			N/A		
1 month			y			N/A			1 month			1 month			1 month		
$25			n			N/A			None			No			N/A		
No			n			No - more than 1 car $75 month			None			No			N/A		
						Floating Home Monthly rate - $700											
Yes			y			No			No			No			No		
No			y			Yes			No			No			No		
Yes			y			Yes			Yes			No			No		
No			y			Yes			No			Yes			No		
No			n			Yes			No			No			No		
Yes			n			No			No			No			Dock Box		
Yes			y			No			Yes			No			No		
Yes/ $13.00/day			n			N/A			Yes/$5.00			No			N/A		
Yes			n			No			Yes			No			N/A		
No			n			No			Yes			No			N/A		
Yes			y			No			Yes			No			Yes		

* Rates reflect recreation side of Harbor

Richmond Yacht Club			San Francisco Marina - West Harbor *			San Francisco Marina - East Harbor			San Leandro Marina			Santa Cruz Marina - North Harbor			Santa Cruz Marina - South Harbor		
John Dinwiddie			Scott Grindy			Scott Grindy			Delmarie Snodgrass			Latisha Marshall			Latisha Marshall		
harbormaster@richmondyc.org			scott.grindy@sfgov.org			scott.grindy@sfgov.org			dsnodgrass@sanleandro.org			scpd@santacruzharbor.org			scpd@santacruzharbor.org		
(510) 234-6959			415-831-6322			415-831-6322			510-577-3490			831-475-6161			831-475-6161		
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
	$5.40	38	$12.99	$12.99	6	$9.39	$9.39	20		$8.42	42	$11.63		117	$12.29		84
	$5.68	60	$13.17	$13.17	69	$9.39	$9.39	152		$8.42	125	$11.63		190	$12.29		149
	$6.22	75	$13.17	$13.17	39	$9.52	$9.52	103		$8.42	128	$11.96		34			
	$6.50	40	$15.98	$15.98	104	$9.52	$9.52	68		$8.42	90	$11.96		18	$12.29	$13.54	90
	$7.02	24	$15.98	$15.98	48					$8.42	28	$13.75		28			
	$7.30	10	$16.34	$16.34	43					$8.42	25				$12.29	$13.54	34
			$16.34	$16.34	21					$8.42	11					$13.54	11
										$8.21	3						
			$16.68	$16.68	4												
			$16.68	$16.68	4												
			$16.68	$16.68	5					$8.42	10						
		247			343			343			462			387			368
98%			89%			78%			27%			99%			99%		
Yes			No			No			Yes			Yes			Yes		
No			Yes			Yes			Yes			Yes			Yes		
Included			Yes			Yes			Yes			Yes			Yes		
Yes			No			No			No			No			No		
No			No			No			Not on site, but close			No			No		
									El Toritos and Horatios restaurants, golf course								
									Marina Inn, Free Parking								
$55.00 per month			No			No			No			$100 mo plus 30% of slip rate/mo			$100/person/mo plus 30% of slip rate/mo		
No			N/A			N/A			No			Not Available			N/A		
Yacht Club Guest only			$2.00/ft per night			$2/ft/night			$20			<50' $1.25/ft/>50'(monohulls) $1.50/ft/Comm$.75/ft			<50' $1.25/ft/50+(monohulls)$1.50/ft/Comm$.75/ft		
			N/A			N/A						N/A			N/A		
Standard Slip rate			N/A			N/A						N/A			N/A		
None			1 month			1 month			1 month			1 month			1 month		
None			$86 per year			$86 per year			No			$100 yr			$100 yr		
None			Daily pass for berthers and guests, $8.00 per night			Daily pass for berthers and guests, $8.00 per night			No			N/A			N/A		
No			Yes			Yes			No			Yes			Yes		
No			No			No			No			Yes			Yes		
Yes			Yes			Yes			Yes (2)			Yes			Yes		
No			No			No			No			No			No		
Yes			No			No			Yes			Yes			Yes		
Yes			No			No			No			No			No		
2 hoists @ 3,400 lbs			No			No			Yes			Yes			Yes		
No			No			No			Yes $10 per launch or $100 per year			Yes $16.00 per launch; $350/yr			Yes $16.00 per launch; $350/yr		
Yes			No			No			Yes			Yes			Yes		
No			No			No			Yes			No			No		
Yacht Club members only			Yes			Yes			Yes			Yes			Yes		

* San Francisco Marina is broken out to show the different rates for each harbor (one newer)

Covered slips available at a higher price

Schoonmaker Point Marina			South Beach Harbor			Suisun City Marina			Treasure Isle Yacht Harbor			Vallejo Municipal Marina			Westpoint Harbor		
Michael Rainey			Joe Monroe			Justin Houde			Cindy Snider			Doug Everett			Mark Sanders		
mikerainey@sbcglobal.net			joe.monroe@sfport.com			jhoude@suisun.com			slips@treasure-isle.com			klindo@cityofvallejo.net			mark@westpointharbor.com		
415-331-5550			415-495-4911 x 1035			707-429-2628			(415) 981-2416			707-648-4370			(650) 701-0545		
Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips	Single Finger	Double Finger	# of Slips
				$11.39	20		$5.77	43		$8.80	46	$7.00	$8.60	46			
				$11.55	200					$10.23	19	$7.00	$8.60	212			
	$17.86	21		$12.42	198		$5.77	97		$11.43	24	$7.00	$8.60	47	$8.89	$8.89	12
	$17.63	84		$13.77	92		$5.77	20		$11.58	3	$7.00	$8.60	104		$9.00	77
	$17.56	12		$14.32	89		$5.77	7				$7.00	$8.60	129		$9.55	63
	$21.52	22		$15.85	42		$5.77	2				$7.00	$8.60	39		$10.00	100
	$20.91	3		$16.26	35				$12.73		11	$7.00	$8.60	31		$10.51	49
	$22.67	11		$17.53												$11.00	51
	$22.72	6													$14.00	$14.00	2
	$22.72	1													$16.00	$16.00	4
					29		$5.77	7			3				$8.00		52
				$17.09	7		$5.77	3			4	$7.00-$9.10/ft		17	$18.00		6
		160			713			179			110			625			416
97%			100%			86%			80%			50%			62%		
Yes			Yes			No			Yes			yes			Yes		
Free			No			Yes			Yes			Yes, w/ Additional cost			Yes, no additional charge		
Included			Varies			Included			Yes			Yes			Yes, no additional charge		
Free			TBD			No			Yes			Yes, limited			Yes - Free; Plus high speed for $50 month		
None			Yes			No			No			Yes			$10/day; $25 for 1 person; $50 for 2+/mo		
			Parking Varies						Pump-out dock			Kayak storage/boat chandlery			Pump-out at each slip		
												2 restaurants/security guard			New docks/new electrical		
															Free Ice		
			No			Not allowed			N/A			$208 per month			$375 per month plus $100 for each additional		
			No			Up to 72 hours			N/A						$175 per month (no more than 3 nights per week)		
$1.25 -$4.00ft + $3.00 for 30amp			Up to 70' $1.25/day; >70' & Charters $2.50 per day			$15.00			$1/ft night			$10			0' or less: $1/ft; 51-80': $2/ft;81-100':$3/ft;100+:$4/		
N/A			N/A						$1/ft night			No			N/A		
N/A			N/A						$1/ft night			same as monthly rate			Same as Live Aboard - 4 month max stay		
1 month			1 month			Yes			1 month plus $50/$100/$150 (based on slip size)			1 month			1.5 monthly fees		
0			Annual Fee $75			No			N/A			No			None		
0			$10 Tenants/$20 -Others)			No			No			No			None		
			No Guest Parking/events														
No			No			Yes/ Open 24 hours			No			Yes			No		
No			N/A			Nearby			No			Yes			No		
No			Yes			Yes			Yes			No			No		
No			No			Yes			No			Yes			No		
Yes			No			No			No			No			Yes		
No			Yes (limited)			No			No			No			Yes		
No			No (yes at Pier 50)			Yes			N/A			Yes			Yes - not yet open to public		
No			N/A			Yes			No			No			N/A		
No			N/A			No			No			No			No		
No			N/A			No			No			No			No		
Yes			Yes - two			Yes			Yes			Yes			Yes - at every slip		

OPM AUDIT OF SLIP NUMBERS/SIZES

(DOCK 1)29 TOTAL SLIPS: 23@30FT, 1@20FT, 5@65FT (side tie)

(DOCK 2) 51 TOTAL SLIPS: 49@30FT, 1@ 24FT, 1@65FT (end tie)

(DOCK 3) 53 TOTAL SLIPS: 51@30FT, 1@24FT, 1@65FT (end tie)

(DOCK 4) 55 TOTAL SLIPS: 53@30FT, 1@24FT, 1@65FT (end tie)

(DOCK 5) 49 TOTAL SLIPS: 47@36FT, 1@30FT, 1@75FT (end tie)

(DOCK 6) 47 TOTAL SLIPS: 40@45FT, 3@30FT, 2@36FT,1@40FT, 1@85FT (end tie)

(DOCK11) 26 TOTAL SLIPS: 18@45FT, 3@40FT, 1@65FT, 4@85FT, (side tie)

(DOCK 12) 44 TOTAL SLIPS: 18@45FT, 24@36FT, 1@80FT, 1@65FT

(DOCK 13) 35 TOTAL SLIPS: 16@50FT, 16@60FT, 1@100FT, 1@65FT, 1@75FT

(DOCK 14) 19 TOTAL SLIPS: 16@60FT, 2@40FT, 1@75FT

TOTAL OF 408 SLIPS