

Facility Condition Survey

Pillar Point Harbor



Executive Summary

This report addresses the condition of the Pillar Point Harbor marina facility on the California Coast at Princeton 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 full time staff who operate and maintain these facilities. The replacement value of the facility is \$32 million, as shown on 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.

Executive Summary-Continued

Because the facility has been maintained, they 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 facilities and identifies those 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 fuel dock is in poor condition and should be replaced or refurbished in the next 1-2 years. The fuel dock is regularly inspected by Harbor Staff and other agencies. 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 either marina that pose an immediate threat to life safety or loss of function to boat mooring and access to the water.

Executive Summary-Continued

The assessment 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 facilities. Based upon the condition, needed repairs were identified, costs estimated and 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.

Executive Summary-Continued

A total of \$2.0 million worth of repairs (Table 2) were identified to be performed over the next 5 years the planning horizon. Some of the major components include replacement of the fuel dock, providing ADA accessibility to the Harbor Master Building, improving security and safety at the dock gates, and improving the electrical service on Johnson Pier-currently in design in a separate SMCHD project. The assessment also addresses the potential effects of Sea Level Rise at the marina. The largest impact will be increased vulnerability to the already failing slope protection on the west portion of the harbor.

Figure 1: Pillar Point Site Plan

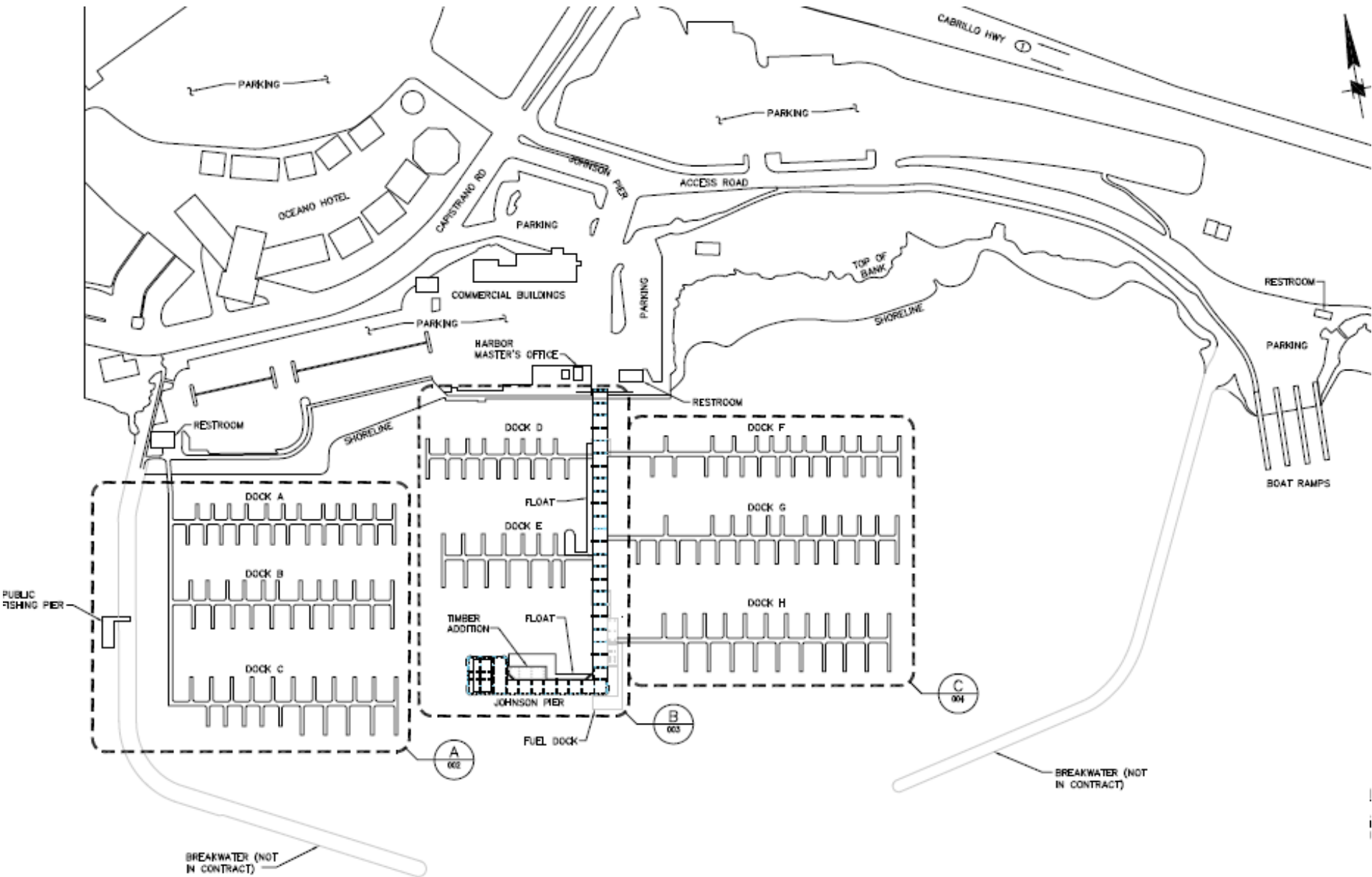


Table 3: Condition Rating

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

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:

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. s separation of a dock would block access to the remaining dock even if not a safety risk)

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.

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-Type-Asset Life

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.

Cost-Type-Asset Life/*Continued*

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.

Condition Assessment Waterside

Docks (A-H)

Cleats are in good condition with a few isolated exceptions. Many of the cleats on the fuel pier are corroded and the anchorage is pulling out due to the warping timbers. Replacement and reattachment has been performed as ongoing maintenance and should continue. Many of the rub strip fenders are worn or loose on the docks and should be replaced or reattached.

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. The pile guides are generally in good condition. One of the five pile guides at the fuel dock should be replaced within the next two years, as the corrosion of the frame prevents the roller from being able to rotate.

Condition Assessment Waterside- *Continued*

Utilities

The utilities on the docks at Pillar Point are new within the last 10 years. The boxes for utilities are generally 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. The hangers are in good condition.

2.2. Gate Structures

Only Dock A has a locked gate that restricts access onto the docks.

The gates on Johnson pier do not have controlled access. Locking gates and wing walls should be installed to provide better security onto the docks.

Condition Assessment Waterside-*Continued*

Gangways

The gangways are in good condition. The walking surface is even and has non-slip surfacing although some has been worn and should be replaced or recoated.

ADA/Accessibility

Currently there is not an accessible gangway at Pillar Point. To comply with ADA guidelines, a gangway of 80 ft length should be installed for increased access, though not required.

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.

Buildings-Harbormaster Office

This is a one story 2,300 square foot building with a 200 square foot second story observation tower estimated to have been constructed in late 1950s or early 1960s. Structurally this building appears to be in fair condition.

ADA: The entrance to the front of the building is not ADA-compliant. The ramp at the rear of the building is outdated and needs to be updated to current ADA standards. The main entry and pathways throughout the building are not ADA-compliant. The front counter is also not at an ADA compliant height. Currently, H.C. access is on the north side of the building at the expansion.

Buildings-Harbormaster Office-Continued

Suggested Accessibility and Operational Improvements

1. Create an accessible ramp to the main entrance of the building
2. Upgrade ramp on the north side of the building
3. Remodel restrooms; potentially changing their location for accessibility
5. Rework interior of building for complete ADA compliance

Suggested Deferred Maintenance And Repair

1. Replace restroom and shower finishes
2. Upgrade and standardize floor finishes throughout the building
3. Install new ADA compliant service counter
4. Repair lighting controls throughout the building
5. Repair ceiling grid in copy area

Maintenance Building:

This building was originally constructed as a one story 1,000 square foot warehouse in the late 1960s and appears to be in fair condition structurally.

Suggested Accessibility and Operational Improvements

None

Suggested Deferred Maintenance and Repair

1. Replace exterior conduit
2. Replace exterior soffits and fascia board
3. Address areas of corrosion
4. Replace corroded doors and frames
5. Repair/replace (2) boarded up windows
6. Replace interior finishes in upstairs locker room
7. Improve heating and ventilation in upstairs locker room

Tenant Row Building

This is primarily a one story building with masonry walls and a timber framed mansard roof. No information was provided on the age of construction however, it appears to be constructed in the late 1960s or early 1970s around the same time as the harbor office building and maintenance shop.

Suggested Accessibility and Operational Improvements

1. Update parking striping
2. Replace approach ramps with compliant design
3. Rework sidewalks and entrance thresholds to be ADA compliant

Suggested Deferred Maintenance and Repair

None

Restrooms

West Restroom-Recently remodeled

Suggested Accessibility and Operational Improvements

1. Improve access path from H.C. accessible parking space
2. Update ramps leading to showers at the west restroom

Suggested Deferred Maintenance and Repair

1. Address brick and concrete efflorescence on the south side of the building

Restrooms Continued-Public by Pier

Condition is “Fair”, due for a remodel 1-3 years:

Suggested Accessibility and Operational Improvements

- 1. Update the accessible ramp to current standards

Suggested Deferred Maintenance and Repair

- 1. Replace corroded exterior doors, frames and hardware
- 2. Address ponding issue in front of restroom entrance
- 3. Repair/replace worn tile in shower areas

Restrooms Continued- Public by Boat Ramp

Condition Poor, Time to replace it:

Suggested Accessibility and Operational Improvements

- 1. Add striped aisle to H.C. accessible parking space

Suggested Deferred Maintenance and Repair

- 1. Replace corroded exterior doors, frames and hardware
- 2. Replace plumbing fixtures
- 4. Repair walls and replace metal trim throughout
- 5. Repair damaged exterior privacy screens
- 6. Repair/replace siding
- 7. Install gutters and downspouts
- 8. Replace conduit for exterior lighting

Roads, Sidewalks, Parking

Roads are in Fair condition with some maintenance required.

Parking lots in Fair condition but repair of cracking and resurfacing/restripe needed.

Sidewalks appear to be in good condition, however the sidewalk at the tenant building is not ADA compliant.

Utilities

Underground Utilities: The underground utilities were not inspected but most of them are now over 50 years old. The sewer line to the tenant row buildings was recently replaced due to blockages and separations. The sewage pump that serves the entire Harbor is in need of replacement.

Electrical: The existing electrical service to shoreside facilities is adequate. The service to the fish buyer buildings on Johnson Pier is becoming aged and inadequate for current use. The service is part of the original construction of the Pier in the early 1960s and is 120/240 volts single phase. The conduit has corroded through in locations and the wire insulation has become exposed to the weather.

The electrical service to the ice house and dock transformers was installed in the 1980s and is 480 volt 3 phase. Further, increased use of electrical equipment at the Fish Buyer buildings has created demand for 480 volt 3 phase service. A separate project with the SMCHD is currently being designed to improve the electric service available at the Fish Buyer Buildings.

Landscaping

Landscaping is minimal since most of the site is paved. The area between the parking lot and the harbor waters had ground cover that was mowed but appeared natural with a pathway

The parking lots had landscaped areas with miscellaneous nautical themed items displayed. The trees located in the parking lot appear to be in good condition.

There is a small area that has been recently improved located behind Tenant Row and is in new condition. The Harbor Office has planters around the perimeter of the building and the plants appear to be in good condition. Restroom #2 has a planter in the front with plants in worn condition. The landscaping near Restroom #1, Restroom #3 and on the hill adjacent to the Maintenance Shop have native foliage in fair condition.

Sea Level Rise Analysis

The current western slope within the harbor is sloughing down into the harbor, resulting the rip rap falling and the soil being exposed. With SLR this will expose the bare slope to greater erosion and cutting back of the soil. The rip rap protection should be repaired or a seawall installed similar to the portion at the Harbormaster Building and East Basin.



Fish buyer Building on Johnson Pier



Pillar Point Harbormaster Office



Tenant Row at Pillar Point Harbor



Tenant Row at Pillar Point Harbor



West Restroom Pillar Point Harbor



Johnson Pier Public Restroom



Roadways at Pillar Point Harbor

Oyster Point Marina / Park



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.

Oyster Point Marina/Park 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.

Oyster Point Marina/Park Buildings- Continued

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
 - age.
 - 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.

Harbor Master's Office Building-Continued

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 age, 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.

Harbor Master's Office Building-Continued

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

Maintenance Building:

This one story 2,300 square foot prefabricated metal building. Settling has caused the building to not be level, with walls now separating and shifting.

Restroom spaces are heavily worn.

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

Restrooms

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

Recently Remodeled and are at ADA standards.

Restrooms #4 & #5 West Side:

Maintained but require remodeling soon.

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

Utilities

Sewer + Vacuum System:

The system is maintained but requires constant care.

Electrical Systems:

Underground systems are a constant failure problem.

Dock power transformers and switchgear on most docks is obsolete and should be replaced due to corrosion and age. Dock power pedestals are fairly new.

Water systems:

Underground will soon require replacement, above ground and docks receive regular maintenance but are aging.

Roads, Sidewalks, Parking & Landscaping

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 were observed as well as standing water due to inadequate drainage.

Sidewalks: The asphalt sidewalks appeared to be in fair condition.

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

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 and well maintained.

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.



Oyster Point Marina Wood Docks



Oyster Point Marina Harbor Office and King Tides



King Tides at Oyster Point Harbor Office



Oyster Point Marina West Restroom



Oyster Point Marina Roads and Parking Lots



Harbor Patrol Training

QUESTIONS?