

INTRODUCTION

The San Mateo County Harbor District is a government agency. It is an independent special district with boundaries coterminous with the County of San Mateo. The District manages two harbors within the County: Pillar Point Harbor in Princeton, CA, which is 4 miles north of Half Moon Bay, and Oyster Point Marina/Park in South San Francisco. The District's administrative offices are in El Granada, California, across the highway from Pillar Point Harbor.

The construction of the East Breakwater resulted in shoaling in Pillar Point Harbor and created an erosion hot spot at Surfer's Beach (Figure 1). Pillar Point Harbor traps sand supply to the HMB littoral subcell, causing sediment deficit and erosion at Surfer's Beach. The breakwater causes wave reflection, which causes further erosion and sand transport to the south.



Figure 1. Sand buildup in Pillar Point Harbor (red arrows) and erosion at Surfer's Beach (blue arrow).

While two harbors in the Santa Cruz Littoral Cell have optimized dredging operations with beneficial use of dredged sand on adjacent beaches, the third one, Pillar Point Harbor, remains one of the few harbors on the coast of California without a beach nourishment effort. Because of this, much-needed sand gets trapped behind the Harbor breakwater, and is not allowed to continue on its natural north-to-south path, resulting in sand-starved beaches down the coast.

Over the past 50 years, an estimated 250,000 cubic yards of sand has been deposited in the Harbor, the same sand that should have continued to replenish the coast to the south. At the same time, beach erosion accelerated from inches to several feet per year to the south of the Harbor. This significant, rapid erosion and beach loss have threatened sandy beach habitat, greatly diminished opportunities for public recreation, and continues to put beaches, roadways (predominantly Highway 1), bike paths, and structures at risk.

The need for a project to mitigate these issues has been identified for decades and now the Harbor District has strong support for such a project from the community, Monterey Bay National Marine

Sanctuary, Greater Farallones National Marine Sanctuary, and others. Surfer's Beach/ El Granada County Beach was included as a Beach Erosion Concern Area in the 2015 Draft Coastal Regional Sediment Management Plan for the Santa Cruz Littoral Cell (CRSMP) and the plan identified this area as a potentially promising site for beach replenishment. However, while there is widespread support for a pilot project, there is currently no funding available to plan for and implement this project. As a result, the Consultant shall obtain funding sources for the Project and, if funding is secured, will provide administration services for the Project as described in the Scope of Services below.

SCOPE OF SERVICES

The Project shall include either or both of these two options:

1. **Option 1:** Opportunistic beach nourishment at Surfer's Beach with placement of dredged sand outside of MBNMS boundaries in the section of beach between the Mean High Water Line and the toe of the bluffs. This option would not require an MBNMS permit, however would require permits and review from a number of other state and federal agencies. This option would also provide benefits to the Harbor by addressing navigational hazards and removing some of the sand that has accumulated since the construction of the East Breakwater.
2. **Option 2:** Opportunistic beach nourishment at Surfer's Beach with placement of upland material (sand, that has been sourced from inside the Harbor using land based equipment but no dredging). This option would require an MBNMS permit, as it involves placement of clean sand within sanctuary boundaries on the portion of the beach below Mean High Water or sub-tidally.

Task 1: The Consultant will apply for and receive grant(s) or other sources of funding to finance the Project. The Consultant must submit funding applications to the District for approval before the Consultant submits the applications. The District reserves the right in its sole discretion to reject funding applications for any reason, including but not limited to a determination that a resulting grant agreement contains terms to which the District does not agree. In order to receive funding, the District's Board of Directors must authorize the General Manager to enter into the funding agreement(s) on behalf of the District. The grant(s) will pay for all consulting efforts made by Consultant, including:

- coordinating the environmental review and permitting process (including permit fees),
- Project planning and engineering,
- implementation of a sand replenishment Project (including construction costs),
- and post-construction monitoring of the sand replenishment at Surfer's Beach.

Examples of potential tasks:

Project Management:

- Undergo a coordinated process to assess funding options for implementing the Project.
- Obtain Approval from the District General Manager for all Grant Applications
- Apply for and receive grant(s) or other sources of funding to finance the Project.

Following the grant award and prior to commencing task 2, the parties will hold a kick-off meeting that will (a) set a Project schedule and (b) specify the deliverables the Consultant must provide associated with each of the Tasks set forth in this Exhibit A, and to comply with grant requirements. The Consultant will complete the scope of work in accordance with the schedule of deliverables agreed upon by the parties.

Task 2: The Consultant will also address key partnering efforts that impact the collective ability to plan for, permit, and complete such a project successfully. This effort will require extensive communication and coordination with all involved local, state, and federal agencies, participation in San Mateo County Harbor District Beach Replenishment Committee meetings, coordination and facilitation of stakeholder and technical workshops, and brief quarterly progress updates with an anticipated timeline to the Board of Harbor Commissioners.

Additionally, as part of this Project, a technical working group will be formed and lead by the Consultant to provide input on the Project design and engineering decisions. This workgroup will communicate regularly during the permitting process and will inform the Board of Harbor Commissioners about any changes to the proposed Project design.

Two workshops will be held to inform the public. The first public workshop will be held during the beginning of the permitting process and a second workshop closer to the implementation phase of the beach replenishment when draft environmental documents and draft Project plans are available.

The agencies and jurisdictions that would need to be engaged in review and permitting of this Project include: NOAA's Monterey Bay National Marine Sanctuary and National Marine Fisheries Service, US Army Corps of Engineers, US Environmental Protection Agency, US Fish and Wildlife Service, Minerals Management Service, California Coastal Commission, California State Lands Commission, California Department of Fish and Wildlife, State Water Resources Control Board, Regional Water Quality Control Board, and Air Pollution Control District. Other organizations and stakeholders that would be engaged as part of this process include County of San Mateo, City of Half Moon Bay, and Caltrans.

Examples of potential tasks by category:

1. Project Management:

- Coordinate with San Mateo County Board of Harbor Commissioners and Pillar Point Harbor staff on all aspects of the Project.

2. Project Design and Engineering:

- Develop a comprehensive list of potential partners and stakeholders and identify their possible roles in plan implementation.
- Conduct individual meetings/interviews with technical experts to obtain initial design input and Project guidance.
- Assemble a Technical Advisory Group and coordinate/facilitate meetings.
- Identify initial Project design alternatives by working with technical experts and stakeholders.
- Determine acceptable Project parameters by working with permitting agencies.
- Coordinate process to prioritize options and agree on a preferred Project design alternative.
- Pursue and oversee contracts for pre-construction engineering and design.

3. Environmental Review

- Oversee and complete all environmental documentation, likely including an Environmental Assessment (Federal, NEPA) and a Mitigated Negative Declaration (State of California, CEQA).
- Coordinate with agency representatives and technical experts to identify potential concerns, and mitigation measures to address potential impacts.
- Complete required analyses of sediment (contaminants, grain size analysis, etc.)

4. Permitting and Agency Review

- Meet individually with resource management and permitting agencies to discuss permitting considerations.
- Convene a permitting workshop(s) with USACE, the MBNMS, the CCC, local jurisdictions, and other regulatory agencies to address permitting requirements, establish acceptable Project parameters, and identify effective mitigation measures.
- Develop a detailed permitting roadmap that details all requirements, timelines, etc.
- Apply for and obtain necessary permits, and conduct necessary follow-up and reporting requirements.

5. Project Monitoring

- Work with permitting and natural resource agencies to determine requirements and protocols for monitoring and to develop criteria for success.
- Contact USGS, and other agencies and local research institutions to explore options for collaborating on monitoring efforts.
- Develop a draft and final post-construction monitoring plan.
- Ensure contracts/agreements are in place for conducting physical and biological monitoring prior to Project construction to develop a baseline for comparison of potential effects, and during and after construction to quantify changes and identify potential issues.

6. Project Implementation (Construction)

- Oversee Project implementation to ensure that Project protocols are being followed and that design objectives and permit conditions are being met.
- Ensure appropriate documentation and monitoring is being conducted.

Memo

Date: October 7, 2015

To: Board of Harbor Commissioners

From: Nicole David
Harbor Commissioner

Re: Discussion of Performance-based Compensation Agreement with Brad Damitz

Recommendation

Consider Performance-based Compensation Agreement with Brad Damitz

Project Background

The construction of the East Breakwater resulted in shoaling in Pillar Point Harbor and created an erosion hot spot at Surfer's Beach (Figure 1). Pillar Point Harbor traps sand supply to the HMB littoral subcell, causing sediment deficit and erosion at Surfer's Beach. The breakwater causes wave reflection, which causes further erosion and sand transport to the south.



Figure 1. Sand buildup in Pillar Point Harbor (red arrows) and erosion at Surfer's Beach (blue arrow).

While two harbors in the Santa Cruz Littoral Cell have optimized dredging operations with beneficial use of dredged sand on adjacent beaches, the third one, Pillar Point Harbor, remains one of the few harbors on the coast of California without a beach nourishment effort. Because of this, much-needed sand gets trapped behind the Harbor breakwater, and is not allowed to continue on its natural north-to-south path, resulting in sand-starved beaches down the coast.

Over the past 50 years, an estimated 250,000 cubic yards of sand has been deposited in the Harbor, the same sand that should have continued to replenish the coast to the south. At the same time, beach erosion accelerated from inches to several feet per year to the south of the Harbor. This significant, rapid erosion and beach loss have threatened sandy beach habitat, greatly diminished opportunities for public recreation, and continues to put beaches, roadways (predominantly Highway 1), bike paths, and structures at risk.

The need for a project to mitigate these issues has been identified for decades and now the Harbor District has strong support for such a project from the community, Monterey Bay National Marine Sanctuary, Greater Farallones National Marine Sanctuary, and others. Surfer's Beach/ El Granada County Beach was included as a *Beach Erosion Concern Area* in the 2015 Draft Coastal Regional Sediment Management Plan for the Santa Cruz Littoral Cell (CRSMP) and the plan identified this area as a potentially promising site for beach replenishment. However, while there is widespread support for a Pilot Project, there is currently no funding available to plan for and implement this project.

The following excerpts from the CRSMP provide a good background to the existing conditions and issues and highlight the severity of the erosion problem and the need for action at Surfer's Beach:

“At the northern end of the reach, just outside of the Pillar Point Harbor East Breakwater, are El Granada or Surfer's Beach and an area that includes Vallejo Beach and Miramar Beach, which are adjacent, small beaches. This area has experienced significant erosion of the beach and bluff since the construction of the breakwater. In a 2009 report, the USACE stated that the construction of the breakwater accelerated the beach and bluff erosion in this area beyond what would have occurred without the breakwater (U.S. Army Corps of Engineers, San Francisco District, 2009)”.

“Because some areas are unprotected, the threat of erosion to Highway 1 is imminent, and preventing or delaying adverse impacts to the highway will require measures such as beach nourishment, armoring of the bluff, or relocation of the road.”

“The erosion of the beach and bluffs adjacent to Highway 1 at Surfer’s Beach has been a significant source of concern for the local community for decades. This erosion issue has been the focus of a number of studies, with recent work by USACE strongly suggesting that construction of the Pillar Point Harbor outer breakwaters, particularly the East Breakwater, has exacerbated the erosion problem.”

“Beach nourishment at Surfer’s Beach would likely involve the direct placement of 150,000 to 200,000 cy of sand on the beach (USACE, 2014b). This option presents several advantages, including a wider beach for recreation and access and potentially reducing wave attack on the toe of the eroding bluff. In addition, Surfer’s Beach presents a logical placement site for sand dredged from the harbor side of the East Breakwater with minimal transportation costs because of the proximity of this beach to the potential sand source. But, there is considerable uncertainty whether the sand placed on the beach will persist beyond several years, particularly if a large storm were to occur shortly after placement.”

Project Plan

The overall plan would be to move forward with the planning and implementation of a Pilot Beach Nourishment Project (Project) to address ongoing coastal erosion issues at Surfer’s Beach. Work on this Project would include a number of specific tasks falling into the following categories:

1. Project Design and Engineering
2. Environmental Review
3. Permitting and Agency Review
4. Project Monitoring
5. Project Implementation (Construction)

Although larger-scale beach nourishment alternatives (150,000 - 250,000 cubic yards) are being evaluated in a USACE Continuing Authorities Program 111 study, this Project would involve placement of much smaller volumes of sand (possibly 50,000 – 75,000 cubic yards). The objective would be to study and monitor the project to determine whether or not it is effective and also to determine if there are any unacceptable environmental impacts. If post construction monitoring and review indicates that the Project is effective in mitigating erosion and does not cause unacceptable impacts, then it is envisioned that a larger beach nourishment project would be pursued in the future. Currently, a larger scale project involving placement of dredged material below Mean High Water could not be permitted under existing Monterey Bay

National Marine Sanctuary (MBNMS) regulations, however it is likely that these regulations will be modified to allow for such a project within 3-5 years.

Greater Farallones National Marine Sanctuary (GFNMS) manages the portion of the coastline of the MBNMS that includes Surfer's Beach and is responsible for issuing permits in this area. It should be noted that while the Sanctuary cannot issue a permit for a larger project, GFNMS Management has recently gone on record encouraging a smaller scale pilot beach nourishment project for Surfer's Beach. The following excerpts from a recent letter the Harbor District Board received from the Greater Farallones National Marine Sanctuary's superintendant Maria Brown provide an overview of the permitting requirements and recommendations for potential projects :

"MBNMS regulations prohibit, among other things, the alteration of the seabed, the discharging or depositing any material into the sanctuary, or constructing or placing any material or other matter on the submerged lands (CFR 922.132(a)(2) and (4)). Activities that would otherwise violate these regulations may in some cases be allowed by a permit under CFR sections 922.49, 922.132(e), and 922.133 if they meet the specified permit criteria. MBNMS can consider permitting certain activities to address shoreline erosion. However, both the regulations and the terms of designation for MBNMS contain specific language that precludes issuing a permit for any project that involves dredged material being disposed of or placed within the sanctuary (i.e. below mean high water) other than at designated disposal sites authorized by the U.S. Environmental Protection Agency prior to the effective date of designation, in 1992.

Nonetheless, we believe there are some feasible options, both short-term and long-term to address the myriad issues at Surfer's Beach and in the harbor. The first, and our preferred, short-term option involves sourcing sand from the shoal that has formed nearby, inside the outer breakwater of Pillar Point Harbor and placing it above mean high water along the most heavily eroding areas of Surfer's Beach so that sand can naturally work into the littoral system and help attenuate erosion; we believe there is an available deposition zone between 80 – 140 feet wide in that area between the bluff and the mean high water line. This alternative would not require a sanctuary permit since sand would be placed outside the boundaries of the sanctuary. If the Harbor Commission were to pursue this option, GFNMS/MBNMS would work with the commission and other agencies to provide historic shoreline data for the Surfer's Beach area to determine a baseline for the sanctuary's boundary. A second short-term option that also could be considered would be to source sand other than from harbor dredge sources, perhaps from upland areas beyond MBNMS, and truck it to and place it below mean high water along Surfer's Beach. This option could possibly be permitted within MBNMS regulations provided that the pilot project design meets strict resource protection standards and MBNMS permit issuance criteria.

Given the significant rates of erosion at Surfer's Beach, GFNMS/MBNMS also recognize that a long-term solution may be needed. Long-term options that might be considered include additional beach nourishment above mean high water including source sand from within the harbor, provided that pilot studies and placement episodes prove effective and protective of sanctuary resources; evaluating the feasibility of a planned managed retreat of Highway 1 to eliminate the need for further coastal armoring (like rock slope protection) and to allow for the beach to be restored; and/or

modifying the outer breakwater, which has contributed significantly to the erosion occurring in this area by interfering with the natural sediment transport along this stretch of coast.

It is also our understanding that the California Department of Transportation (Caltrans) is currently in the processing of implementing a shoreline protection project to protect Highway 1 that will involve short-term emergency armoring along the most severely eroded portion of the bluff at Surfer's Beach, while a long-term plan can be developed that achieves shoreline protection without continued and increased coastal armoring. We believe that the first short term alternative discussed above can be carried out promptly to reduce and perhaps eliminate the need for armoring at Surfer's Beach while also providing new sand to nourish the beach, thereby allowing improvement of the area for various coastal recreation activities."

End of excerpt

Therefore, consistent with the requirements detailed in this letter from GFNMS, this Project could include either or both of the following options:

1. **Option 1:** Opportunistic beach nourishment at Surfer's Beach with placement of dredged sand outside of MBNMS boundaries in the section of beach between the Mean High Water Line and the toe of the bluffs. This option would not require an MBNMS permit, however would require permits and review from a number of other state and federal agencies. This option would also provide benefits to the Harbor by addressing navigational hazards and removing some of the sand that has accumulated since the construction of the East Breakwater.
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Definitions:

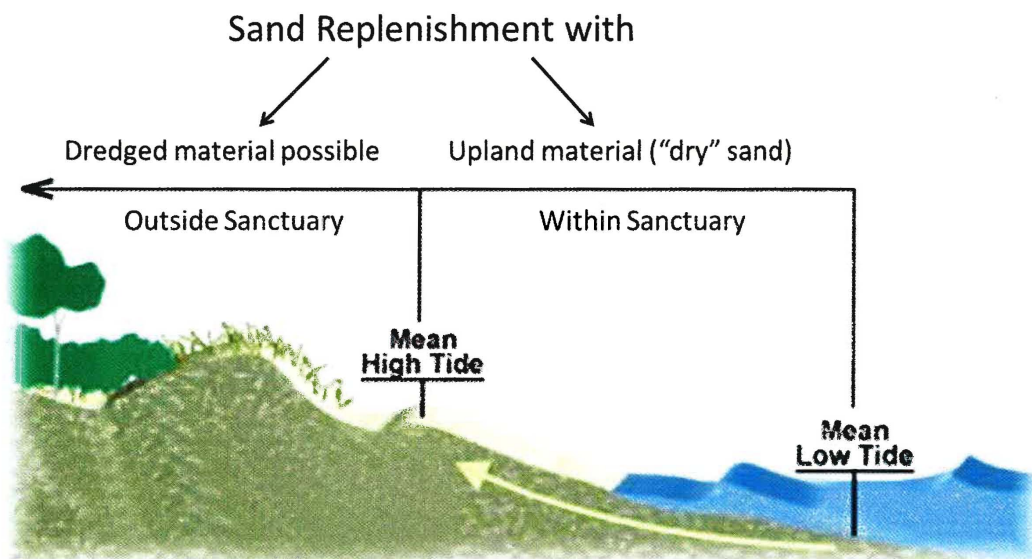
Mean High Water (MHW) (from NOAA shoreline glossary)

A tidal datum. The average of all the high water heights observed over the National Tidal Datum Epoch. For stations with shorter series, simultaneous observational

comparisons are made with a control tide station in order to derive the equivalent datum of the National Tidal Datum Epoch. (NOS CO-OPS 1 2000)

Mean High Water Line (MHWL)

The line on a chart or map which represents the intersection of the land with the water surface at the elevation of mean high water. (NOS CO-OPS 1 2000)



Upland material ("dry" sand) options:

- Perched Beach could roughly provide 20,000 cubic yards of "dry" sand (red oval)



- Triangle across from RV Park could provide 50,000-80,000 cubic yards of “dry” sand (red oval). Some mitigation effort could be offered for using the sand from this location and restoration of the remaining sand build-up to native coastal strand habitat could be part of this project.



These two options for upland (“dry”) sand would provide enough material for a beach replenishment pilot project that at this point aims to use roughly 75,000 cubic yards of sand.

Performance-based Compensation Agreement

A Performance-based Compensation Agreement (PBCA) would establish a framework for the coordination and alignment of resources to support the San Mateo County Harbor District in conducting a sand replenishment pilot project at Surfer’s Beach (Pilot). An agreement like this can be the basis for improving beach sand replenishment, maintenance, and access.

The Harbor District enters into an agreement with Brad Damitz (consultant) with the goal to secure grant money as a funding source for planning, permitting, and implementation of the San Mateo County Harbor District’s Surfer’s Beach Pilot. The consultant has no expectations of compensation unless grant money for beach replenishment is successfully secured. In addition, the grant(s) would be the only source of funds to be spent on the project - the project will be completed with grant funds and without the need for additional funds from the Harbor District.

Proposed Scope of Work

The consultant will apply for and receive grant(s) or other sources of funding to finance this Pilot Project. The grant(s) will pay for all consulting efforts made by consultant, including:

- coordinating the environmental review and permitting process (including permit fees),
- project planning and engineering,
- implementation of a sand replenishment project (including construction costs),
- and post-construction monitoring of the sand replenishment at Surfer’s Beach.

The consultant will also address key partnering efforts that impact the collective ability to plan for, permit, and complete such a project successfully. This effort will require extensive communication and coordination with all involved local, state, and federal agencies, participation in San Mateo County Harbor District Beach Replenishment Committee meetings,

coordination and facilitation of stakeholder and technical workshops, and brief quarterly progress updates with an anticipated timeline to the Board of Harbor Commissioners.

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Examples of potential tasks by category:

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5. Project Monitoring

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- Contact USGS, and other agencies and local research institutions to explore options for collaborating on monitoring efforts.
- Develop a draft and final post-construction monitoring plan.
- Ensure contracts/agreements are in place for conducting physical and biological monitoring prior to project construction to develop a baseline for comparison of

potential effects, and during and after construction to quantify changes and identify potential issues.

6. Project Implementation (Construction)

- Oversee project implementation to ensure that Project protocols are being followed and that design objectives and permit conditions are being met.
- Ensure appropriate documentation and monitoring is being conducted.

Fiscal Impact

Staff time to complete agreement/contract.

Minimal staff time to assist with project oversight, grant administration and coordination with other county agencies.