

## **CALIFORNIA COASTAL COMMISSION**

NORTH CENTRAL COAST DISTRICT  
455 MARKET STREET, SUITE 300  
SAN FRANCISCO, CA 94105  
PHONE: (415) 904-5260  
FAX: (415) 904-5400  
WEB: WWW.COASTAL.CA.GOV



# **W11a**

**2-15-1357-A1 (San Francisco Public Utilities Commission Armoring)**

**November 17, 2021**

## **EXHIBITS**

### **Table of Contents**

### **EXHIBITS**

**Exhibit 1 – Vicinity Map**

**Exhibit 2 – North Ocean Beach Project Area**

**Exhibit 3 – South Ocean Beach Project Area**

**Exhibit 4 – Conditions as Amended**

**Exhibit 5 – ESA Technical Memorandum**

**Exhibit 6 – Sand Berm Construction Diagram**

**Exhibit 7 – CCPN vs. CCSF Settlement Agreement**



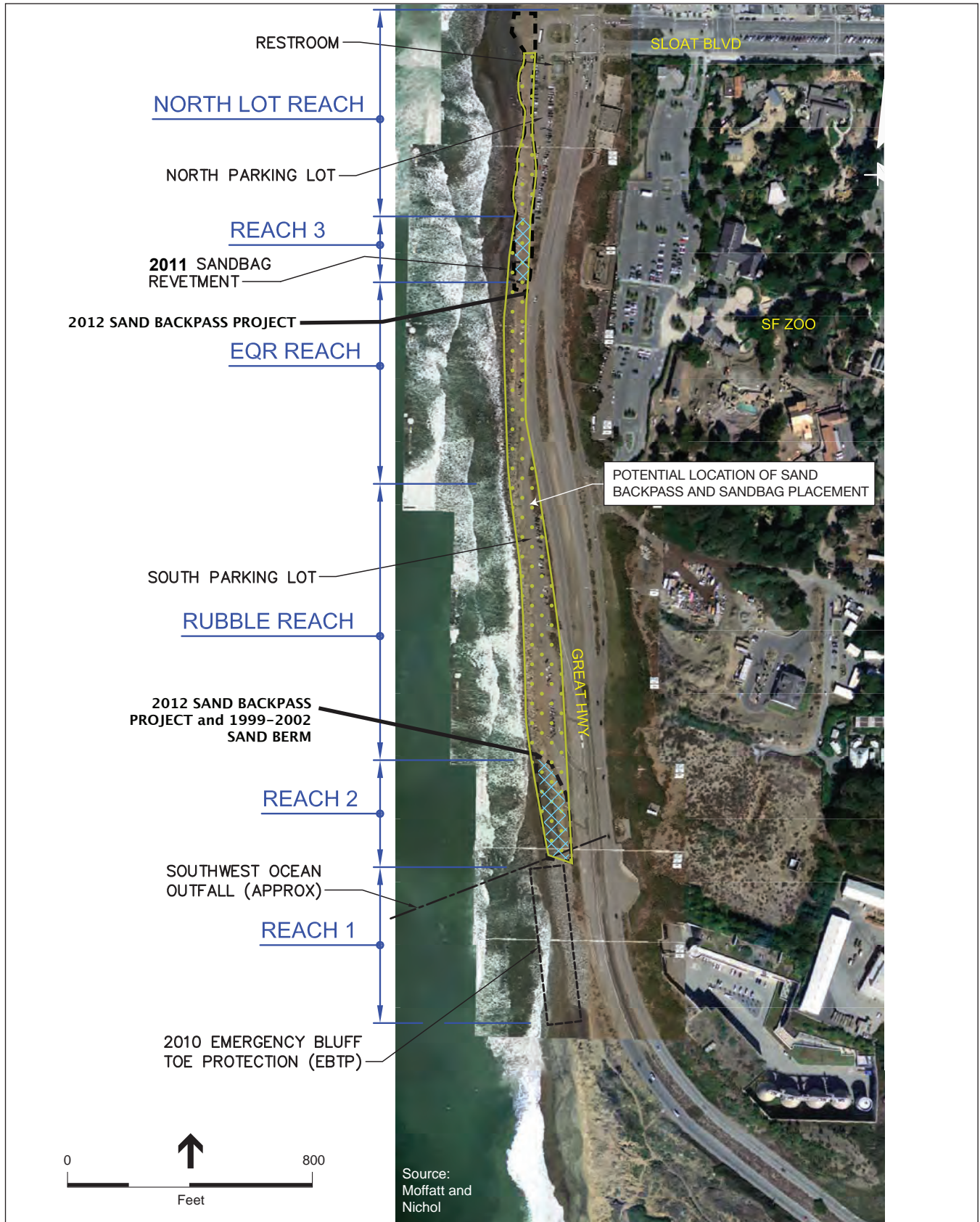




SOURCE: ESA, 2015; Google Earth

Ocean Beach Interagency Coastal Framework . 120925

**Figure 1**  
Proposed Sand Backpass Excavation Areas



SOURCE: Moffatt & Nichol, 2012; ESA, 2015

Ocean Beach Interagency Coastal Framework . 120925

**Figure 2**  
South Ocean Beach (SOB) Reaches



## I. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. ~~**Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.~~
2. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
3. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
4. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions

## II. SPECIAL CONDITIONS

This amended CDP is approved subject to the following special conditions:

**NOTE:** Exhibit 4 shows all CDP 2-15-1357 standard and special conditions as approved by the Commission in its original 2015 action. All such conditions continue to apply in that form unless modified below, where changes are shown in underline and ~~strikeout~~ format (for additions and deletions, respectively) as applicable.

1. **Term of Authorization.** This CDP authorizes the shoreline protection system fronting the bluffs south of Sloat Boulevard consisting of: 1) the work proposed in CDP Application No. 2-15-1357 (sandbags and sand relocation), as well as the work proposed in CDP Application No. 2-15-1357-A1 (as depicted in Exhibit 6 of that authorization); 2) the Emergency Quarystone Revetment as depicted on **Exhibit 3**; 3) the Emergency Bluff Toe Protection as depicted on **Exhibit 3**; and 4) the Emergency Sandbag Structure as depicted on **Exhibit 3**, until ~~December 31, 2021~~ July 1, 2022, or until the time when the currently existing structures warranting protection are no longer present and/or no longer require such protection, whichever occurs first. ~~If the Permittee intends to keep the existing shoreline protection system or any portion of it in place, including any sand relocation or sand bag activities, after December 31, 2021, the Permittee must submit a complete CDP application (or complete CDP amendment application if deemed appropriate~~

~~by the Executive Director) prior to December 31, 2021. Otherwise, t~~The Permittee shall submit two copies of a removal and restoration plan to the Executive Director for review and approval, where such plan shall provide for the removal of the shoreline protection system and restoration of all affected areas in a manner designed to be most protective of coastal resources, no later than ~~December 31, 2021~~ July 1, 2022, unless the Commission authorizes the shoreline protection approved by this permit, or some portion thereof, to remain in place pursuant to a CDP or amendment to this CDP.

2. **Long-Term Solution.** The Permittee acknowledges that the shoreline protection system authorized pursuant to this CDP is temporary in nature, and is permitted in order to provide a reasonable period of time for the Permittee to develop and implement a long-term managed retreat solution (as currently outlined generally in **Exhibit 7**) to the erosion threat to the Great Highway and related public infrastructure in this area. The Permittee shall submit two copies of an annual report to the Executive Director for review and approval at annual intervals no later than November 1st of each year (with the first report due November 1, 2016), identifying progress made toward implementation of the long-term solution. If, after review of the annual report, in the opinion of the Executive Director, the Permittee is significantly out of compliance with the terms and conditions of this CDP, including meeting target deadlines established in Exhibit 7 (on page 2), then the matter of noncompliance shall be scheduled for Coastal Commission review and potential action, where such action at the Coastal Commission's discretion may include modifying the terms and conditions of this CDP, including the term of the permit.
3. **Project Plans.** PRIOR TO CONSTRUCTION ASSOCIATED WITH ANY INDIVIDUAL DEVELOPMENT EPISODE, the Permittee shall provide two copies of Project Plans for Executive Director review and approval showing all development and related activities (including but not limited to sand relation/berming, sand bag placement, wind fencing/barriers, and public access pathways/accessways) associated with the development episode, all of which shall be substantially consistent with the development as authorized in **Special Condition 1**, and shall be sited and designed to protect coastal resources to the maximum extent feasible. The Permittee shall undertake development in accordance with the approved Project Plans. All requirements above and all requirements of the approved Project Plans shall be enforceable components of this CDP.
4. **As-Built Plans.** WITHIN 30 DAYS OF ANY ACTIVITIES UNDERTAKEN PURSUANT TO THIS COASTAL DEVELOPMENT PERMIT AMENDMENT NO. 2-15-1357-A1, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans for Executive Director review and approval showing all revetments and sandbags, any development undertaken as authorized by this CDP, public infrastructure (i.e., parking lots, pathways, the Great Highway, the Lake Merced Tunnel), and all property lines for the shoreline area affected by the approved project. The As-Built Plans shall be substantially consistent with the project as described in CDP

Application No. 2-15-1357 and as shown in Exhibit 3. The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall include color photographs (in hard copy and .jpg or other electronic format) that clearly show all components of the as-built project and all areas depicted on the As-Built Plans, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be upcoast, seaward, and downcoast viewpoints, seen from the edge of the highway and from a sufficient number of beach viewpoints as to provide complete photographic coverage of the permitted shoreline protection system and the public infrastructure being protected at this location. Such photographs shall be at a scale that allows comparisons to be made with the naked eye between photographs taken in different years and from the same vantage points; recordation of GPS coordinates would be desirable for this purpose. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the shoreline protection system has been constructed in conformance with the project as described in CDP No. 2-15-1357 and as shown in Exhibit 3.

- a) **As-Built Plans.** Within 30 days of any activities undertaken pursuant to CDP Amendment Number 2-15-1357-A1, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans for Executive Director review and approval showing all such development undertaken as authorized by this CDP Amendment, all nearby public infrastructure (i.e., parking lots, pathways, the Great Highway, the Lake Merced Tunnel), all property lines for the shoreline area affected by the approved project, and all as-built development authorized by CDP Number 2-15-1357. The As-Built Plans shall be substantially consistent with the project as described in CDP Amendment Number 2-15-1357-A1, and shall comply with all applicable provisions of Special Condition 4 otherwise.

5. **Construction Plan.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two sets of a Construction Plan to the Executive Director for review and approval. The Construction Plan shall, at a minimum, include the following:

- a) **Construction Areas.** The Construction Plan shall identify the specific location of all construction areas, all staging areas, all storage areas, all construction access corridors (to the construction site and staging areas), and all public pedestrian access corridors. All areas within which construction activities and/or staging are to take place shall be minimized to the maximum extent feasible in order to minimize construction encroachment on the beach, all beach access points, and to have the least impact on public access and coastal resources overall.
- b) **Construction Methods and Timing.** The Construction Plan shall specify the construction methods to be used, including all methods to be used to keep the

construction areas separated from public recreational use areas (including using the space available on the blufftop portions of the Permittee's property for staging, storage, and construction activities to the maximum extent feasible, and including using unobtrusive fencing (or equivalent measures) to delineate construction areas), and all erosion control/water quality best management practices to be implemented during construction and their location shall be noted.

**c) Construction Best Management Practices.** The Construction Plan applies to any 2-15-1357 activities undertaken pursuant to this CDP, as well as future maintenance as described in **Special Condition 7**. The plan shall identify the type and location of all best management practices that will be implemented during construction including the following:

- All work shall take place during daylight hours. Lighting of the beach area is prohibited.
- Unless authorized by the Executive Director, construction work or equipment operations may not be conducted below the mean high tide line unless tidal waters have receded from the authorized work areas, or in an emergency as defined by Coastal Act regulations.
- Grading of intertidal areas is prohibited.
- Only rubber-tired construction vehicles are allowed on the beach, except that track vehicles may be used if the Executive Director agrees that they are required to safely carry out construction. When transiting on the beach, all such vehicles shall remain as high on the upper beach as possible and avoid contact with ocean waters and intertidal areas.
- All construction materials and equipment placed on the beach during daylight construction hours shall be stored beyond the reach of tidal waters. All construction materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. The only exceptions shall be for erosion and sediment controls and/or construction area boundary fencing where such controls and/or fencing are placed as close to the shoreline protection as possible, and their extent is minimized to the extent practicable.
- Construction (including but not limited to construction activities, and materials and/or equipment storage) is prohibited outside of the defined construction, staging, and storage areas.
- No work shall occur during weekends and/or the summer peak months (i.e., from the Saturday of Memorial Day weekend through Labor Day, inclusive), unless due to extenuating circumstances (such as tidal issues



or other environmental concerns), the Executive Director authorizes such work.

- Equipment washing may not take place on the beach. Refueling and/or servicing of equipment shall be allowed only at a designated location as noted on the Plan. Appropriate best management practices shall be used to ensure that no spills of petroleum products or other chemicals take place during these activities.
- The construction site shall maintain good construction site housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain, including covering exposed piles of soil and wastes; dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the beach; etc.).
- All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each workday.
- All beach areas, all beach access points, and all other public access facilities (e.g., parking lots and paths) impacted by construction activities shall be restored to their pre-construction condition or better within three days of completion of construction. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach.

**d) Western Snowy Plover Protection Measures.** The Construction Plan shall provide for a qualified biologist to identify the beach access route and escort the contractor and any crew with heavy equipment to and from the construction site, in order to avoid potential impacts to western snowy plover or other wildlife, and to ensure that beach habitat is not disturbed. A qualified biologist shall monitor the project area for western snowy plover during construction activities and instruct the contractor and crew on appropriate measures to avoid potential impacts to western snowy plover.

**e) Bank Swallow Protection Measures.** The Construction Plan shall provide that all construction activities shall avoid impacts to bank swallows and bank swallow habitat. The Applicant shall consult with and comply with the requirements of the National Park Service related to potential impacts to biological resources.

**f) Construction Site Documents.** The plan shall provide that a copy of the signed CDP and the approved Construction Plan shall be maintained in a conspicuous location at the construction job site at all times during construction, and such copies shall be available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the CDP and the

approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.

- g) Construction Coordinator.** The plan shall provide that a construction coordinator be designated to be contacted during construction for questions by the public. Contact information, including phone number, e-mail address, and street address, shall be conspicuously posted at the job site and readily visible from public viewing areas, along with indication that the construction coordinator should be contacted in the case of questions regarding the construction. The construction coordinator shall record the name, contact information (i.e., address, phone number, e-mail address, as applicable) and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 72 hours of receipt of the complaint or inquiry.
- h) Notification.** The Permittee shall notify planning staff of the Coastal Commission's North Central Coast District Office at least 3 working days in advance of commencement of construction, and immediately upon completion of construction.

Minor adjustments to the Construction Plan may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. All requirements above and all requirements of the approved Construction Plan shall be enforceable components of this CDP. The Permittee shall undertake 2-15-1357 (San Francisco Public Utilities Commission) 10 construction in accordance with the approved Construction Plan.

- 6. Monitoring.** The Permittee shall ensure that the condition and performance of the as-built shoreline protection system is regularly monitored by a licensed civil or geotechnical engineer with experience in coastal structures and processes. Such monitoring evaluation shall, at a minimum, address whether significant weathering or damage has occurred that would adversely affect future performance or the revetments and sandbags, and identify any structural or other damage requiring repair to maintain the as-built revetments or sandbags in a structurally sound manner. Monitoring reports prepared by a licensed civil engineer with experience in coastal structures and processes, and covering the above-described evaluations, shall be submitted to the Executive Director for review and approval at annual intervals by November 1st of each year.
- 7. Future Maintenance.** This CDP requires ongoing monitoring of the overall shoreline protection system at this location and authorizes future maintenance of that system as described in this special condition through ~~December 31, 2021~~ July 1, 2022. The Permittee acknowledges and agrees that: (a) it is the Permittee's responsibility to maintain the shoreline protection system in a structurally sound manner and in its approved state; (b) it is the Permittee's responsibility to retrieve

loose armor rock or sandbags that might otherwise substantially impair the recreational and/or scenic qualities of the beach; (c) it is the Permittee's responsibility to annually or more often inspect the shoreline protection system for signs of failure and/or displaced armor rock or sandbags; and (d) it is the Permittee's responsibility to ensure regular maintenance of the parking lots at South Ocean Beach so as to avoid the accumulation of windblown sand that would limit the public's ability to access parking. Any such maintenance-oriented development associated with the revetments and sandbags shall be subject to the following:

- a) Maintenance.** "Maintenance," as it is understood in this condition, means development that would otherwise require a CDP whose purpose is to repair and/or maintain the shoreline protection system in its approved configuration, including retrieval of armor rock and/or sandbags that may be displaced from the project as approved. Any proposed modifications to the approved as-built plans or required construction BMPs associated with any maintenance event shall be reported to planning staff of the Coastal Commission's North Central Coast District Office with the maintenance notification (described below), and such changes shall require a CDP amendment unless the Executive Director deems an amendment is not legally required.
- b) Other Agency Approvals.** The Permittee acknowledges that these maintenance conditions do not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes.
- c) Future Maintenance Notification.** Prior to commencing any future maintenance event, the Permittee shall notify, in writing, planning staff of the Coastal Commission's North Central Coast District Office. Except for necessary emergency interventions, such notice shall be given by first-class mail at least two weeks in advance of commencement of work. The notification shall include a detailed description of the maintenance event proposed, and shall include any plans, engineering and/or geology reports, proposed changes to the maintenance parameters, other agency authorizations, and other supporting documentation describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's North Central Coast District Office that the maintenance event complies with this CDP. If the Permittee has not received a response within 30 days of receipt of the notification by the Coastal Commission's North Central Coast District Office, the maintenance shall be authorized as if planning staff affirmatively indicated that the event complies with this CDP. The notification shall clearly indicate that the maintenance event is proposed pursuant to this CDP, and that the lack of a response to the notification within 30 days of its receipt constitutes approval of it as specified in the CDP.
- d) Non-Compliance Proviso.** If the Permittee is not in compliance with the terms and conditions of this CDP at the time that a future maintenance event is proposed,

then the maintenance event that might otherwise be allowed by the terms of this condition may only be allowed subject to approval by the Executive Director.

- e) **Emergency.** Nothing in this condition shall serve to waive any Permittee rights that may exist in cases of emergency pursuant to Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).

**8. Assumption of Risk, Waiver of Liability and Indemnity Agreement.** The Permittee acknowledges and agrees:

- a) **Hazards.** That the site is subject to coastal hazards including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunamis, tidal scour, coastal flooding, earthquakes, landslides, and the interaction of same.
- b) **Assume Risks.** To assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development.
- c) **Waive Liability.** To unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards.
- d) **Indemnify.** To indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to the permitted development.
- e) **Property Owner Responsible.** That any adverse effects to property caused by the permitted project shall be fully the responsibility of the property owner.

**9. Archaeological Resources.** In the event that any article of historical or cultural significance is encountered, all activity that could damage or destroy these resources must cease and the Executive Director and the Native American Heritage Commission must be notified so that the articles may be suitably protected or flagged for future research. A qualified archaeologist and/or the Native American Heritage Commission shall be consulted in order to examine the site and obtain recommendations for subsequent measures for the avoidance, and if necessary, protection and disposition of significant artifacts. Avoidance and mitigation measures shall be developed and submitted to the Executive Director for review and approval.

**10. Other Agency Review and Approval.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, and/or authorizations



for the approved project have been granted by all applicable agencies (including NPS, U.S. Army Corps of Engineers, and San Francisco Bay Regional Water Quality Control Board). Any changes to the approved project required by these agencies shall be reported to the Executive Director. No changes to the Commission-approved project shall occur without a Commission amendment to this CDP unless the Executive Director determines that no amendment is legally necessary.

**11. Liability for Costs and Attorney Fees.** The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorney fees (including but not limited to such costs and fees that are: (1) charged by the Office of the Attorney General; or (2) required by a court) that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this CDP. The Permittee shall reimburse the Coastal Commission within 60 days of being informed by the Executive Director of the amount of such costs or fees. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.



550 Kearny Street  
Suite 800  
San Francisco, CA 94108  
415.896.5900 **phone**  
415.896.0332 **fax**

[www.esassoc.com](http://www.esassoc.com)

# memorandum

date January 29, 2015

to Anna Roche (SFPUC)

cc Steve Ortega (GGNRA)

from Louis White, PE

subject Placement of Medium-sized Sand Layer for Mitigation of Wind-blown Sand Transport  
South Ocean Beach Short-Term Erosion Protection Measures Project (ESA Ref. #D120925.00)

## Introduction

Sand placements at South Ocean Beach (SOB) that occurred as part of the 2012 and 2014 Sand Backpass projects used sand from North Ocean Beach (NOB), which provided the anticipated benefits but also resulted in wind-blown sand transport that partially blocked bluff-top parking and other facilities. Several measures are being proposed to mitigate wind-blown sand transport at the proposed sand backpass placement sites included in the South Ocean Beach Short-Term Erosion Protection Measures Project (project) being led by the San Francisco Public Utilities Commission (SFPUC). The project comprises a suite of soft erosion control measures to be implemented between 2016 and 2021 while the permitting, environmental review and design of the long-term project are completed. This document addresses an optional element to place a layer of coarser sand on top of the NOB sand to mitigate wind-blown transport associated with sand backpass projects expected to occur between 2016 and 2021.

The purpose of this memorandum is to provide a description of the proposed medium-sized coarse sand available in Central San Francisco Bay, and how it will be applied as a wind-blown sand mitigation measure for the forthcoming sand backpass projects, for review by the SFPPUC and the National Park Service.

## Characteristics of Ocean Beach Sand

Sand at Ocean Beach is considered fine to medium size sand with a nominal diameter of about 0.3 millimeters (mm). Patches of coarser sand are located near the water line, whereas finer sand is located along the landward parts of wider shores and in dunes. The coarser sands result from historic sand supply. The coarse sand is typically exposed on the beach surface in the swash zone (water line) due to high-velocity wave action and runup. The finer sands are sorted by wind transport from dry shores and deposited on the landward side of beaches and in dunes. (Battalio 2014; Moffatt and Nichol 1995; Barnard et al. 2012; USACE 2011; Moffatt and Nichol 2007).

The sand used for backpassing is excavated from the very wide portions of NOB, primarily from the landward area adjacent to the O'Shaughnessy Seawall. As such, this sand is likely to be similar to the nominal beach grain size, but likely a bit finer and hence more susceptible to wind-blown transport. There is limited beach sand at SOB during the winter, and the NOB sand is likely finer than would naturally be stable in this highly eroded and scouring condition.

Prior sand placements (pre-backpassing) in the 1999 to 2004 timeframe used sand dredged from Central San Francisco Bay (Figure 1). The Central San Francisco Bay sand source was selected because of its coarser size and increased stability and compatibility for beach nourishment. Wind-blown sand transport was not a significant problem during these prior placements, probably because the coarser sand used was less mobile than the NOB backpassed sand under winds.



Photo by Bob Battalio

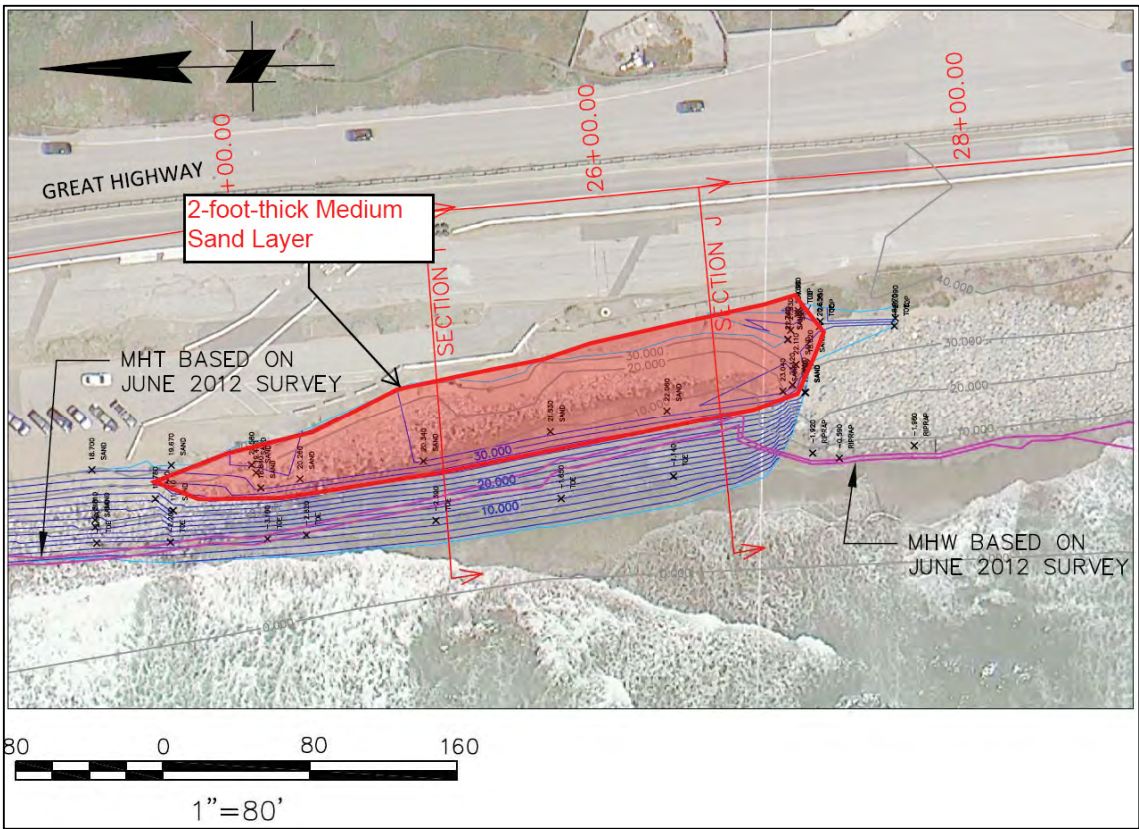
**Figure 1**  
Sand Placement at South Ocean Beach 1999-2001  
Using Coarse Sand Dredged from Central San Francisco Bay

## Application to Proposed Sand Backpassing 2016 to 2021

To minimize wind-blown sand impacts as part of the proposed sand backpass projects, we propose to add a layer of medium-sized sand on the backpassed sand embankment. A layer two feet thick across the top and extending down the seaward slope four feet is proposed, as shown in Figures 2 and 3. A grain size of 0.5 mm is proposed (nominal size roughly equivalent to the median size in a distribution of sizes).

The medium-sized sand layer will be placed at some point in 2016 after the backpass sand berm is installed. Placing the NOB sand during the winter-spring time frame may be difficult due to environmental conditions. The

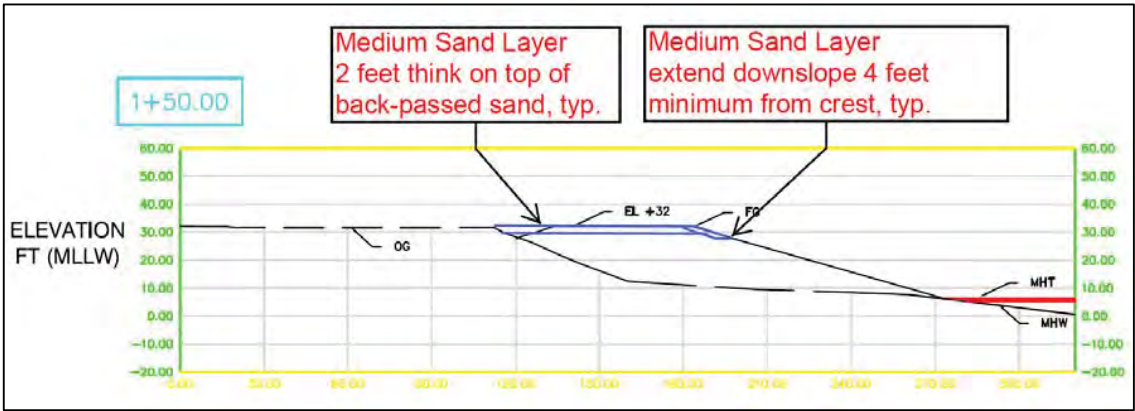
NOB sand will be actively eroding during and immediately after placement. Hence, we anticipate a second sand placement episode at which time the medium-sized sand layer can be installed.



Source: Moffatt and Nichol As-Built Survey 2012 Backpass

**Figure 2**

Schematic Plan View of Proposed 2-foot-thick Medium-Sized Sand Layer (Red Polygon) to be Placed on Top of Backpass Berm Extending 4 feet Down Slope



Source: Moffatt and Nichol Draft Construction Plans for Sand Backpass

**Figure 3**

Schematic Showing the Proposed 2-foot-thick Medium-Sized Sand Layer (Blue Lines) to be Placed on Top of Backpass Berm Extending 4 feet Down Slope



The medium-sized sand layer placement extents will be measured and recorded. The sand layer will be monitored to assess effectiveness in terms of limiting wind-blown transport as well as other sand placement objectives. The monitoring will be incorporated into the SFPUC ongoing monitoring and reporting for the South Ocean Beach Short-Term Erosion Projection Measures Project. Monitoring will consist of:

- Survey of medium sand extents as part of beach profile surveys
- Survey of wind-blown sand deposits on bluff top
- Grab samples of surface sands and grain size analysis to document extents
- Photographs

## Medium-Sized Sand Availability

Sand meeting the characteristics described above is commercially available. Local sand mining operations in the Central San Francisco Bay produce several thousand tons of beach quality sand per week.<sup>1</sup> Samples of raw dredged sand product obtained from Lehigh Hanson Aggregates appear to be compatible in sand quality, color, and size to the coarser sands that naturally occur at Ocean Beach (Figure 4). The sand from the Angel Island shoal is considered medium-coarse sand, with naturally variable colors and with some shell fragments.



Photo by Louis White

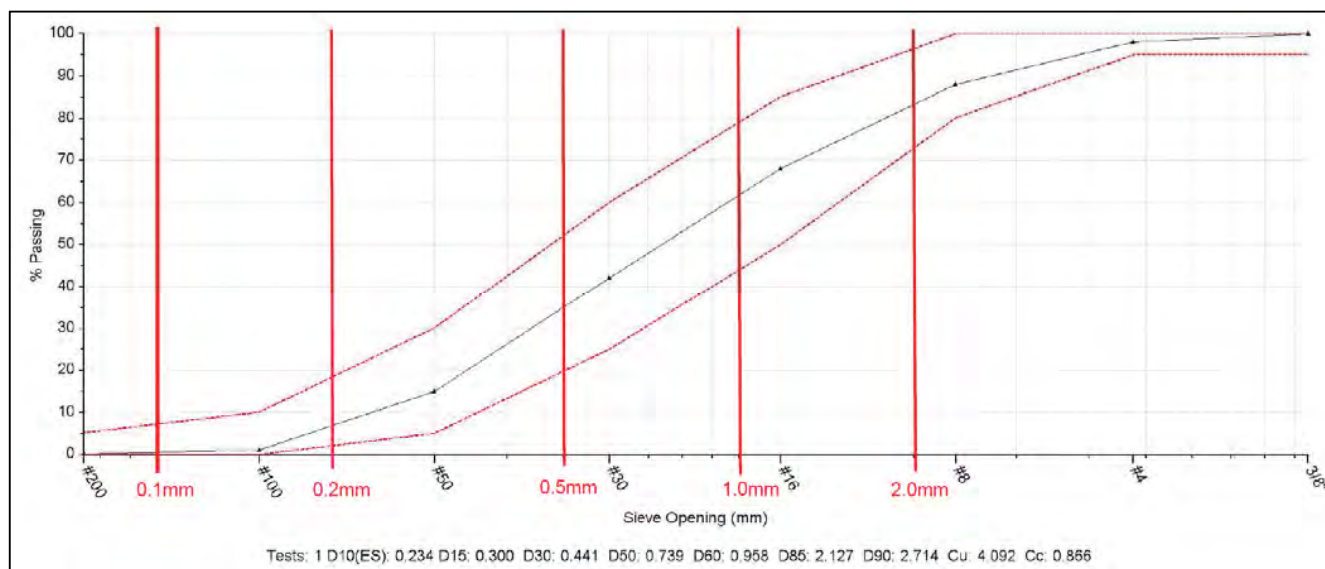
**Figure 4**  
Photo of Unscreened Medium-Sized Sand Dredged from the  
Angel Island Shoal in Central San Francisco Bay

According to sand gradations obtained from Lehigh Hanson Aggregates, the sand dredged from the Angel Island shoal in Central San Francisco Bay has a nominal size of approximately 0.7 mm. Figure 5 presents the graphical

---

<sup>1</sup> Pers. Comm., Chris Stromberg, Lehigh Hanson Aggregates, January 29, 2016.

results of this sand gradation, also included as an attachment to this memorandum. Note that the median grain size varies between samples, and the black line indicates an average over all sand samples. Most of the sand sizes vary between 0.2 and 2.0 mm.



Source: Lehigh Hanson Aggregates

**Figure 5**  
Sand Gradation of Unscreened Medium-Sized Sand Dredged from the Angel Island Shoal in Central San Francisco Bay

Additional commercially available sand dredged from San Francisco Bay near Carquinez Strait is available from Lind Marine (formerly Jerico Products) in Petaluma. We have not obtained samples nor observed this sand source. However, according to available specifications from Lind Marine, sand size varies between 0.15 mm and 0.6 mm, with a nominal or median grain size of approximately 0.3 mm. However, this sand gradation may represent screened sand, which typically is processed to remove most fines and larger sized material.

## References

- Barnard, P.L., Hansen, J.E., and Erikson, L.H., 2012, Synthesis study of an erosion hot spot, Ocean Beach, California, *Journal of Coastal Research*, Vol. 28, No. 4, pp. 903-922.
- Battalio, B., 2014, Littoral processes along the Pacific and bay shores of San Francisco, California, USA, *Shore & Beach*, Vol. 82, No. 1, pp. 3-21.
- Moffatt and Nichol, 1995, Sediment Transport Processes Study, Ocean Beach, San Francisco, California, Final Report Prepared for U.S. Army Corps of Engineers, July 31, 1995.
- Moffatt and Nichol, 2007, Ocean Beach, California, Guidance for a Beach Nourishment Study Under Section 933, Prepared for City & County of San Francisco, July 2007.
- U.S. Army Corps of Engineers (USACE), 2011, Coastal Engineering Appendix, Nourishment Study, Ocean Beach, San Francisco, CA, DRAFT, Prepared by U.S. Army Corps of Engineers, San Francisco District.

## Attachment A: Lehigh Hanson Sand Gradation Summary Central SF Bay





## **SETTLEMENT AGREEMENT AND MUTUAL RELEASE**

This Settlement Agreement and Mutual Release (“the Agreement”) is entered into between and among California Coastal Protection Network (“CCPN”) and the City and County of San Francisco (“the City”). Collectively, CCPN and the City are “the Parties.”

### **RECITALS**

A. On August 9, 2011 CCPN filed a complaint against the City in San Francisco Superior Court entitled *California Coastal Protection Network v. City & County of San Francisco*, Case No. CGC-11-513176, (“the Action”), asserting causes of action for: (1) declaratory relief; (2) injunctive relief; (3) civil fines; and (4) daily fines;

B. The City answered the complaint, denies CCPN’s allegations, and denies any allegations of wrongdoing, fault, or liability alleged in the Action or otherwise;

C. The Parties wish to settle their differences and avoid further litigation, without concession to the merits of any claim or allegation asserted in the Action;

NOW, THEREFORE, the Parties agree to fully settle their dispute on the following terms and conditions:

### **AGREEMENT**

1. This Agreement is subject to approval by the San Francisco Public Utilities Commission, the San Francisco Board of Supervisors and the Mayor. Subject to the foregoing, each Party represents and warrants that it has the right and authority to execute this Agreement.

2. Within five (5) business days after the Public Utilities Commission, the Board of Supervisors and the Mayor have approved this Agreement, CCPN will submit to the San Francisco Superior Court a judgment pursuant to the terms of this settlement, as provided in section 664.6 of the California Code of Civil Procedure.

3. Within thirty (30) business days after entry of judgment, the City shall pay to CCPN the sum of \$125,000.00 (one hundred twenty five thousand dollars and no cents). The payment shall be in the form of a check payable to CCPN’s counsel, Otten & Joyce, LLP. This payment fully satisfies CCPN’s demand for attorneys’ fees and costs in connection with this Action.

4. The parties acknowledge and agree that the California Environmental Quality Act (“CEQA”) requires public agencies to consider the environmental impacts of a project before committing to implementing it. The actions described below, including the Long Term Adaptive Management Plan and the Immediate-Term Coastal Erosion Management Plan, and any other actions proposed to be undertaken by the City, are subject to CEQA review before the City may approve such action. Accordingly, until the environmental review process has been completed, the City must retain the sole and absolute discretion to: (i) make such modifications to a proposed project as are deemed necessary to mitigate significant environmental impacts; (ii) select other feasible alternatives to avoid such impacts; (iii) balance the benefits against unavoidable significant impacts prior to taking final action if such significant impacts cannot otherwise be avoided; or (iv) determine not to proceed with a proposed project if the City determines that the benefits of a proposed project fail to outweigh the unavoidable significant impacts.

5. The Parties have agreed to the following timeline for the City to develop and initiate implementation of a Long-term Adaptive Management Plan (LAMP) for the South Reach of San Francisco’s Ocean Beach that preserves recreational opportunities, complies with all applicable land use and environmental laws and regulations, and contemplates a managed retreat in the face of expected sea level rise. The South Reach of Ocean Beach (“SROB”) is the area south of Sloat Boulevard.



- a. The City has already engaged with the San Francisco Planning and Urban Research Association (“SPUR”) and stakeholders to develop an Ocean Beach Master Plan. SPUR published the Ocean Beach Master Plan in May 2012.
  - b. San Francisco expects SPUR to issue its Preferred Alternative, after it is reviewed and approved by all stakeholders, by the end of 2014. The City expects to proceed with environmental review of SPUR’s Preferred Alternative recommendation, which is considering and may include managed retreat strategies, as well as debris removal and rerouting of the Great Highway from SROB.
  - c. Environmental review under CEQA and NEPA, following SPUR’s publication of its Preferred Alternative, is expected to take from 18-36 months (through 2017). The variable time estimate depends in part on whether the Preferred Alternative will require a full Environmental Impact Report, or whether it will require only a Mitigated Negative Declaration.
  - d. By January 1, 2018, or promptly upon completion of the environmental review set forth in section 5.c., the City shall submit applications for necessary permits and approvals for LAMP (from, e.g., the California Coastal Commission, the Army Corps of Engineers, the Golden Gate National Recreation Area, the California Department of Fish & Wildlife, the United States Fish & Wildlife Service). This permit procedure is expected to take approximately 12 months (through 2018).
  - e. Contract bids and awards for a project of this scope typically take about 8-12 months (through 2019).
  - f. Construction of the approved project is expected to take about 18-24 months (through 2021).
6. The City will immediately direct SPUR and its partners to consider the following measures in developing the LAMP: 1) analyze shoreline retreat; and 2) analyze limited future shoreline armoring for the sewer facility only, as an aesthetically natural looking curved and contoured structure so as to protect the sewer facility.
7. The Parties recognize that events beyond the City’s control could cause unforeseen delay in the timetable set forth in paragraph 5, above. For example, a legal challenge to implementation of the Ocean Beach Master Plan under CEQA or NEPA would likely delay the project. The City agrees to use its best efforts to adhere to the timeline set forth in paragraph 5, above, and to notify CCPN promptly if the City becomes aware of circumstances that will require modification of the timeline. The Parties further recognize that implementation of the LAMP is an adaptive, iterative process that will be informed by the experience obtained through implementation of interim measures, and the parties expect LAMP will be modified as necessary and appropriate to reflect this information and experience that is not yet available.
8. Pending full implementation of the LAMP, the City has engaged SPUR to develop with stakeholders interim measures, including an Immediate-Term Coastal Erosion Management Plan.
9. These interim measures, including the Immediate-Term Coastal Erosion Management Plan, remain under development. Erosion control and beach maintenance interventions currently under consideration as immediate measures include sand backpassing (i.e., trucking surplus sand from the North Reach of Ocean Beach to eroded areas of the South Reach), sandbags to protect the bluff from direct wave action, and rubble reuse to limit bluff erosion. As part of this Agreement, City will immediately direct SPUR to consider the feasibility of the following measures to improve public access and recreation opportunities to the SROB pending full implementation of the LAMP:

- a. Remove and/or reconfigure the concrete parking and traffic barriers currently spread throughout the SROB and along the unused roadbed in order to facilitate and allow increased public parking and recreational enjoyment on what remains of the former roadway and remaining asphalt infrastructure, during the pendency of the LAMP planning process.
- b. that benches, picnic tables, trails, trash containers, landscaping and other public park amenities be considered for the western bluff edge area in order to create an interim public park-like recreation area between the existing parking lots (and what is left of them) and Fort Funston, in the area formerly used as roadway ("Managed Retreat Area");
- c. that rocks and debris located below the mean high tide line in the Managed Retreat Area be annually removed or repurposed so long as such removal and/or repurpose use further up the bluff in the Managed Retreat Area does not jeopardize existing sewer infrastructure; and
- d. that nourishment and creation of sand ladders or other safe access down to the beach be included so long as it will not jeopardize natural resources or sensitive species in the area.

10. Within 12 months of the execution of this Agreement, The City will implement the Immediate-Term Coastal Erosion Management Plan consistent with SPUR's analysis and recommendations, to the extent these measures complete environmental review and obtain all necessary permits and approvals from regulatory agencies with jurisdiction over the activities.

11. The City agrees to limit its emergency response during the implementation of LAMP to continued use of beach nourishment (including natural material sand bags) and other measures that may be permitted and approved by the California Coastal Commission. The City further agrees to obtain all necessary permits and/or authorizations from all governmental agencies including, but not limited to, the California Coastal Commission before engaging in any emergency response, subject to the procedures authorized in section 13144 of Title 14 of the California Code of Regulations (14 CCR § 13144), and section 30611 of the California Public Resources Code.

12. CCPN and its officers, agents, servants, employees, attorneys and other persons who are in active concert or participation with them shall not oppose the City's applications for permits and approvals to implement the LAMP and the interim measures, including the Immediate-Term Coastal Erosion Management Plan, set forth herein.

13. Upon entry of the Judgment set forth in paragraph 2 above and receipt of the payment set forth in paragraph 3, above, CCPN, on behalf of itself and its present, former and future affiliates, divisions, departments, officers, directors, employees, representatives, agents, successors, assigns, and attorneys, fully release, waive, and forever discharge the City (including, without limitation, all of the City's departments, boards, commissions, officers, commissioners, employees and attorneys) and its agents and insurers from any and all civil claims, demands, actions, suits, rights, and causes of actions and liabilities of any nature, known or unknown, suspected or unsuspected, whether legal, equitable, or statutory, including, but not limited to, civil penalties and punitive damages, costs, expenses and attorney fees, which arise out of or in any way relate to this Action, based on conduct occurring at any time up to and including the effective date of this Agreement.

14. Upon entry of the Judgment set forth in paragraph 2 above, the City, on behalf of itself and its present, former and future affiliates, divisions, officers, commissioners, employees, representatives, agents, successors, assigns and attorneys, fully releases, waives and forever discharges CCPN and its present, former and future affiliates, divisions, officers, directors, employees, representatives agents, insurers, sureties and attorneys, from any and all civil claims, demands, actions, suits, rights, and causes of actions and liabilities of any nature, known or

unknown, suspected or unsuspected, whether legal, equitable, or statutory, including, but not limited to, civil penalties and punitive damages, costs, expenses and attorney fees, which arise out of or in any way relate to this Action, based on conduct occurring at any time up to and including the effective date of this Agreement.

15. Each of the Parties understands and agrees that if any facts concerning claims released in this Agreement should be found hereafter to be other than or different from the facts now believed to be true, they expressly accept and assume the risk of such possible difference in facts and agree that the releases in this Agreement will remain effective. Therefore, and subject to the reservation stated above, with respect to the claims released in this Agreement, each of the Parties knowingly and expressly waives any rights or benefits provided by Section 1542 of the Civil Code, which reads as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR.

16. In the event either Party contends that the other Party is in breach of any of its obligations under this Settlement Agreement, then the complaining Party shall give written notice (the "Notice") specifying in reasonable detail the alleged breach or lack of compliance. The responding Party shall be given a thirty (30) day period (the "Cure Period") from the date of receipt of the Notice in which to correct or cure the breach or lack of compliance. If the complaining Party contends at the end of the Cure Period that the alleged breach has not been corrected or cured, the Parties shall meet and confer for a minimum of 30 additional days before the complaining party shall have the right to enforce this Settlement Agreement in court. Each party shall make itself reasonably available to meet and confer during this 30-day period and shall meet and confer in good faith. In any action to enforce this Settlement Agreement, the prevailing party shall be entitled to reasonable attorney fees. The Parties hereby expressly agree and stipulate that the San Francisco County Superior Court shall retain jurisdiction over this matter pursuant to California Code of Civil Procedure, §664.6.

17. Any notice, request, consent, waiver or other communication required or permitted hereunder shall be effective only if it is in writing and personally delivered or sent by certified or registered mail, postage prepaid, by nationally recognized overnight courier or by telecopier (with confirmation of delivery of telecopy), addressed as set forth below:

If to CCPN:

**Otten & Joyce, LLP**  
c/o Victor Otten, Esq.  
3620 Pacific Coast Highway, Suite 100  
Torrance, CA 90505  
Telecopy: (310) 347-4225  
E-Mail: vic@ottenandjoyce.com

With copies to:

**Mark Massara, Esq.**  
1642 Great Highway  
San Francisco, CA 94122  
E-Mail: markmassara@coastaladvocates.com

If to the City:

**San Francisco Public Utilities Commission**

Harlan L. Kelly, Jr.  
SFPUC, General Manager  
525 Golden Gate Ave., 13th Floor  
San Francisco, CA 94102  
Phone: 415-554-0740  
Email: hkelly@sfgov.org

and to:

Anna Roche  
Wastewater Enterprise  
Grants Program Manager and Legislative Liaison  
525 Golden Gate Ave., 11<sup>th</sup> Floor  
San Francisco, CA 94102  
Phone: 415-551-4560  
Email: aroche@sfgov.org

With copies to:

**San Francisco City Attorney's Office**

City Hall, Room 234  
San Francisco, CA 94102  
Attention: James M. Emery  
Telecopy: (415) 554-4757  
E-Mail: jim.emery@sfgov.org

or such other person or address as the addressee may have specified in a notice duly given to the sender as provided herein. Such notice or communication shall be deemed to have been given as of the date received by the recipient thereof or the date of rejection of attempted delivery. All notices given hereunder shall also be given by electronic mail at the electronic mail addresses set forth above.

18. This Agreement shall expire on December 31, 2021.
19. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of California.
20. The terms set forth in this Agreement constitute the final expression of the Parties' agreement and understanding. This Agreement can be amended, modified, or terminated only by a writing executed by all Parties. No modification or waiver of any provisions of this Agreement shall be effective unless the same shall be in writing and signed by all Parties.
21. The Parties agree that the Agreement shall be binding upon the Parties and any successors-in-interest and assigns.
22. The Parties acknowledge that they have read this Agreement, that they have been advised by the counsel of their choice, and that the determination of the terms of this Agreement has been by mutual agreement following negotiation. Each Party understands each and every term, condition, and provision of the Agreement. Accordingly, the rule of construction specified in California Civil Code section 1654 that uncertainties in a contract are to be interpreted against the party who caused the uncertainty to exist is hereby expressly waived by all parties. For purposes of this Agreement, the Parties agree that any ambiguity shall be resolved as if the Agreement and each provision had been jointly conceived and drafted.



23. This Agreement may be executed and delivered in any number of counterparts or copies by the Parties. The execution of counterparts shall have the same force and effect as if all Parties had signed the same instrument. The Parties further agree that facsimile or photocopied signatures have the same force and effect as original signatures for all purposes.

IN WITNESS HEREOF, each Party has caused this Agreement to be executed on the date opposite its signature block.

Dated: \_\_\_\_\_, 2013

CALIFORNIA COASTAL PROTECTION NETWORK,

\_\_\_\_\_  
by Susan Jordan, its President

Dated: \_\_\_\_\_, 2013

CITY AND COUNTY OF SAN FRANCISCO

\_\_\_\_\_  
Harlan L. Kelly, Jr.  
General Manager  
San Francisco Public Utilities Commission

Approved as to form:

Dated: \_\_\_\_\_, 2013

\_\_\_\_\_  
Victor J. Otten  
Counsel for California Coastal Protection Network

Dated: \_\_\_\_\_, 2013

\_\_\_\_\_  
James M. Emery, Esq.  
Deputy City Attorney