

# City of San Diego

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ADDRESS: 1500 Pier C Street Berth 57 Long Beach, CA 90813  
TELEPHONE NO.: 562-666-6971 FAX NO.: \_\_\_\_\_  
CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, Email: ASanFilippo@sandiego.gov  
Phone No. (619) 533-3439, Fax No. (619) 533-3633  
G. Freiha / R. W. Bustamante / LJI

## BIDDING DOCUMENTS



ORIGINAL



FOR

## MISSION BAY NAVIGATIONAL SAFETY DREDGING

BID NO.: K-18-1576-DBB-3  
SAP NO. (WBS/IO/CC): B-10163  
CLIENT DEPARTMENT: 1714  
COUNCIL DISTRICT: 2  
PROJECT TYPE: GG

### THIS CONTRACT WILL BE SUBJECT TO THE FOLLOWING:

- > THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.
- > PREVAILING WAGE RATES: STATE  FEDERAL
- > APPRENTICESHIP

### BID DUE DATE:

2:00 PM

SEPTEMBER 6, 2017

CITY OF SAN DIEGO

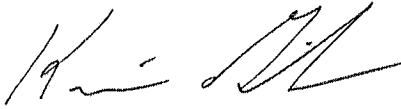
PUBLIC WORKS CONTRACTS

1010 SECOND AVENUE, 14<sup>th</sup> FLOOR, MS 614C

SAN DIEGO, CA 92101

**ENGINEER OF WORK**

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineers:

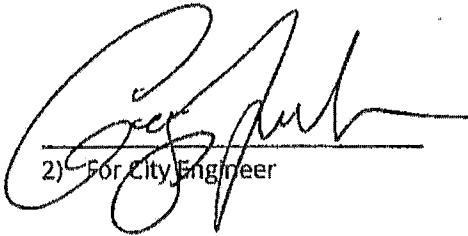


7/28/17

1) Registered Engineer

Date

Seal:



7/28/2017

2) For City Engineer

Date

Seal:



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## NOTICE INVITING BIDS

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **Mission Bay Navigational Safety Dredging**. For additional information refer to Attachment A.
2. **FULL AND OPEN COMPETITION:** This contract is open to full competition and may be bid on by Contractors who are on the City's current Prequalified Contractors' List. For information regarding the Contractors Prequalified list visit the City's web site: <http://www.sandiego.gov>.
3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$9,360,000**.
4. **BID DUE DATE AND TIME ARE: SEPTEMBER 6, 2017 AT 2:00 PM**
5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D.
6. **LICENSE REQUIREMENT:** The City has determined that the following licensing classification(s) are required for this contract: **A**
7. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract.
  - 7.1. The City has incorporated voluntary subcontractor participation percentage to enhance competition and maximize subcontracting opportunities as follows.
  - 7.2. The following voluntary subcontractor participation percentage for DBE, DVBE, WBE, MBE, SLBE, and ELBE certified Subcontractors shall apply to this contract:  
**Total voluntary subcontractor participation percentage for this project is 10%.**

**8. PRE-BID MEETING:**

**8.1.** Prospective Bidders are **required** to attend the Pre-Bid Meeting. The purpose of the meeting is to discuss the scope of the Project, submittal requirements, the pre-qualification process and any Equal Opportunity Contracting Program requirements and reporting procedures. To request a sign language or oral interpreter for this visit, call the Public Works Contracts Division at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. Failure to attend the Mandatory Pre-Bid Meeting may result in the Design-Builder's Bid being deemed non-responsive. The Pre-Bid meeting is scheduled as follows:

**Date:** August 17, 2017  
**Time:** 10:00 AM  
**Location:** 1010 Second Avenue, Suite 1400, San Diego, CA 92101

Attendance at the Pre-Bid Meeting will be evidenced by the Bidder's representative's signature on the attendance roster. It is the responsibility of the Bidder's representative to complete and sign the attendance roster.

**Bidders may not be admitted after the specified start time of the mandatory Pre-Bid Meeting.**

**9. PRE-BID SITE VISIT:** All those wishing to submit a bid **MUST** visit the Work Site with the Engineer. The purpose of the Site visit is to acquaint Bidders with the Site conditions. To request a sign language or oral interpreter for this visit, call the Public Works Contracts at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. The Pre-Bid Site Visit is scheduled as follows:

**Time:** 1:30 PM  
**Date:** August 17, 2017  
**Location:** South Shores Park Parking Lot/Boat Launching Area

Attendance at the Pre-Bid Site Visit will be evidenced by the Bidder's representative's signature on the attendance roster at the start and at the end of the Site Visit. It is the responsibility of the Bidder's representative to complete and sign the attendance roster.

**10. AWARD PROCESS:**

**10.1.** The Award of this contract is contingent upon the Contractor's compliance with all conditions of Award as stated within these documents and within the Notice of Intent to Award.

**10.2.** Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening. The City will then award the Contract within approximately 14 days of receipt of properly signed Contract, bonds, and insurance documents.

- 10.3. This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 10.4. The low Bid will be determined by the Base Bid alone.
- 10.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base bid alone.

**11. SUBMISSION OF QUESTIONS:**

- 11.1. The Director (or Designee) of Public Works Department is the officer responsible for opening, examining, and evaluating the competitive Bids submitted to the City for the acquisition, construction and completion of any public improvement except when otherwise set forth in these documents. Any questions related to this solicitation shall be submitted to:

Public Works Contracts  
1010 Second Avenue, 14<sup>th</sup> Floor  
San Diego, California, 92101  
Attention: Antoinette Sanfilippo

OR:

[ASanFilippo@sandiego.gov](mailto:ASanFilippo@sandiego.gov)

Questions received less than 14 days prior to the date for opening of Bids may not be considered.

- 11.2. Questions or clarifications deemed by the City to be material shall be answered via issuance of an addendum and posted to the City's online bidding service.
- 11.3. Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Bidder's responsibility to be informed of any addenda that have been issued and to include all such information in its Bid.

- 12. **SUPPLEMENTAL AGREEMENTS:** Supplemental agreements attached to this contract for the items of Work such as Long-Term Revegetation Maintenance Agreement shall be signed by the BIDDER at the time of submission of the primary BID. The signed agreements shall be accompanied by the evidence of a bond (i.e., labor and materials) and insurance as specified in 2-4, "CONTRACT BONDS," 7-3, "LIABILITY INSURANCE," and 7-4 WORKERS' COMPENSATION INSURANCE. Bonds shall be in amount of the Contract Price for the Work included in the supplemental agreements.

- 13. **Partial Release of Performance Bond and Labor and Materialmen's Bond:** For information regarding partial release of bonds for this Contract, see Supplementary Special Provisions, Appendix E.

## INSTRUCTIONS TO BIDDERS

### 1. PREQUALIFICATION OF CONTRACTORS:

- 1.1. Contractors submitting a Bid must be pre-qualified for the total amount proposed, including all alternate items, prior to the date of submittal. Bids from contractors who have not been pre-qualified as applicable and Bids that exceed the maximum dollar amount at which contractors are pre-qualified may be deemed **non-responsive** and ineligible for award. Complete information and links to the on-line prequalification application are available at:

<http://www.sandiego.gov/cip/bidopps/prequalification.shtml>

- 1.2. The completed application must be submitted online no later than 2 weeks prior to the bid opening. For additional information or the answer to questions about the prequalification program, contact David Stucky at 619-533-3474 or [dstucky@sandiego.gov](mailto:dstucky@sandiego.gov).
- 1.3. Due to the City's responsibility to protect the confidentiality of the contractors' information, City staff will not be able to provide information regarding contractors' prequalification status over the telephone. Contractors may access real-time information about their prequalification status via their vendor profile on PlanetBids™.

### 2. ELECTRONIC FORMAT RECEIPT AND OPENING OF BIDS: Bids will be received in electronic format (eBids) EXCLUSIVELY at the City of San Diego's electronic bidding (eBidding) site, at: <http://www.sandiego.gov/cip/bidopps/index.shtml> and are due by the date, and time shown on the cover of this solicitation.

- 2.1. **BIDDERS MUST BE PRE-REGISTERED** with the City's bidding system and possess a system-assigned Digital ID in order to submit an electronic bid.
- 2.2. The City's bidding system will automatically track information submitted to the site including IP addresses, browsers being used and the URLs from which information was submitted. In addition, the City's bidding system will keep a history of every login instance including the time of login, and other information about the user's computer configuration such as the operating system, browser type, version, and more. Because of these security features, Contractors who disable their browsers' cookies will not be able to log in and use the City's bidding system.
- 2.3. The City's electronic bidding system is responsible for bid tabulations. Upon the bidder's or proposer's entry of their bid, the system will ensure that all required fields are entered. **The system will not accept a bid for which any required information is missing.** This includes all necessary pricing, subcontractor listing(s) and any other essential documentation and supporting materials and forms requested or contained in these solicitation documents.

- 2.4. BIDS REMAIN SEALED UNTIL BID DEADLINE.** eBids are transmitted into the City's bidding system via hypertext transfer protocol secure (https) mechanism using SSL 128-256 bit security certificates issued from Verisign/Thawte which encrypts data being transferred from client to server. Bids submitted prior to the "Bid Due Date and Time" are not available for review by anyone other than the submitter which has until the "Bid Due Date and Time" to change, rescind or retrieve its proposal should it desire to do so.
- 2.5. BIDS MUST BE SUBMITTED BY BID DUE DATE AND TIME.** Once the bid deadline is reached, no further submissions are accepted into the system. Once the Bid Due Date and Time has lapsed, bidders, proposers, the general public, and City staff are able to immediately see the results on line. City staff may then begin reviewing the submissions for responsiveness, EOCP compliance and other issues. The City may require any Bidder to furnish statement of experience, financial responsibility, technical ability, equipment, and references.
- 2.6. RECAPITULATION OF THE WORK.** Bids shall not contain any recapitulation of the Work. Conditional Bids may be rejected as being non-responsive. Alternative proposals will not be considered unless called for.
- 2.7. BIDS MAY BE WITHDRAWN** by the Bidder only up to the bid due date and time.
- 2.7.1. Important Note:** Submission of the electronic bid into the system may not be instantaneous. Due to the speed and capabilities of the user's internet service provider (ISP), bandwidth, computer hardware and other variables, it may take time for the bidder's submission to upload and be received by the City's eBidding system. It is the bidder's sole responsibility to ensure their bids are received on time by the City's eBidding system. The City of San Diego is not responsible for bids that do not arrive by the required date and time.
- 2.8. ACCESSIBILITY AND AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE:** To request a copy of this solicitation in an alternative format, contact the Public Works Contract Specialist listed on the cover of this solicitation at least five (5) working days prior to the Bid/Proposal due date to ensure availability.

**3. ELECTRONIC BID SUBMISSIONS CARRY FULL FORCE AND EFFECT**

- 3.1.** The bidder, by submitting its electronic bid, acknowledges that doing so carries the same force and full legal effect as a paper submission with a longhand (wet) signature.
- 3.2.** By submitting an electronic bid, the bidder certifies that the bidder has thoroughly examined and understands the entire Contract Documents (which consist of the plans and specifications, drawings, forms, affidavits and the solicitation documents), and that by submitting the eBid as its bid proposal, the bidder acknowledges, agrees to and is bound by the entire Contract Documents, including any addenda issued thereto, and incorporated by reference in the Contract Documents.



- 3.3.** The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this bid are true and correct.
- 3.4.** The Bidder agrees to the construction of the project as described in Attachment "A– Scope of Work" for the City of San Diego, in accordance with the requirements set forth herein for the electronically submitted prices. The Bidder guarantees the Contract Price for a period of 120 days (90 days for federally funded contracts and contracts valued at \$500,000 or less) from the date of Bid opening. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent.
- 4. BIDS ARE PUBLIC RECORDS:** Upon receipt by the City, Bids shall become public records subject to public disclosure. It is the responsibility of the respondent to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the Bid. General references to sections of the California Public Records Act (PRA) will not suffice. If the Contractor does not provide applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City shall be free to release the information when required in accordance with the PRA, pursuant to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.
- 5. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:**
- 5.1.** Prior to the Award of the Contract or Task Order, you and your Subcontractors and Suppliers must register with the City's web-based vendor registration and bid management system. For additional information go to:  
  
<http://www.sandiego.gov/purchasing/bids-contracts/vendorreg.shtml>.
- 5.2.** The City may not award the contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified in the Notice of Intent to Award letter, the City reserves the right to rescind the Notice of Award / Intent to Award and to make the award to the next responsive and responsible bidder / proposer.
- 6. JOINT VENTURE CONTRACTORS:** Provide a copy of the Joint Venture agreement and the Joint Venture license to the City within 10 Working Days after receiving the Contract forms. See 7-6, "The Contractors Representative" in The GREENBOOK and 7-6.1 in The WHITEBOOK.
- 7. PREVAILING WAGE RATES WILL APPLY:** Refer to Attachment D.
- 8. SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract. Refer to Attachment E.

**9. INSURANCE REQUIREMENTS:**

- 9.1. All certificates of insurance and endorsements required by the contract are to be provided upon issuance of the City's Notice of Intent to Award letter.
- 9.2. Refer to sections 7-3, "LIABILITY INSURANCE", and 7-4, "WORKERS' COMPENSATION INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

**10. REFERENCE STANDARDS:** Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

Title	Edition	Document Number
Standard Specifications for Public Works Construction ("The GREENBOOK") <a href="http://www.greenbookspecs.org/">http://www.greenbookspecs.org/</a>	2015	PWPI070116-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* <a href="https://www.sandiego.gov/publicworks/edocref/greenbook">https://www.sandiego.gov/publicworks/edocref/greenbook</a>	2015	PWPI070116-02
City of San Diego Standard Drawings* <a href="https://www.sandiego.gov/publicworks/edocref/standarddraw">https://www.sandiego.gov/publicworks/edocref/standarddraw</a>	2016	PWPI070116-03
Citywide Computer Aided Design and Drafting (CADD) Standards <a href="https://www.sandiego.gov/publicworks/edocref/drawings">https://www.sandiego.gov/publicworks/edocref/drawings</a>	2016	PWPI092816-04
California Department of Transportation (CALTRANS) Standard Specifications - <a href="http://www.dot.ca.gov/des/oe/construction-contract-standards.html">http://www.dot.ca.gov/des/oe/construction-contract-standards.html</a>	2015	PWPI092816-05
CALTRANS Standard Plans <a href="http://www.dot.ca.gov/des/oe/construction-contract-standards.html">http://www.dot.ca.gov/des/oe/construction-contract-standards.html</a>	2015	PWPI092816-06
California Manual on Uniform Traffic Control Devices Revision 1 (CA MUTCD Rev 1) - <a href="http://www.dot.ca.gov/trafficops/camutcd/">http://www.dot.ca.gov/trafficops/camutcd/</a>	2014	PWPI092816-07
<b>NOTE:</b> *Available online under Engineering Documents and References at: <a href="http://www.sandiego.gov/publicworks/edocref/index.shtml">http://www.sandiego.gov/publicworks/edocref/index.shtml</a>		

**11. CITY'S RESPONSES AND ADDENDA:** The City, at its discretion, may respond to any or all questions submitted in writing via the City's eBidding web site in the **form of an addendum**. No other responses to questions, oral or written shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addenda are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda at the time of bid submission.

12. **CITY'S RIGHTS RESERVED:** The City reserves the right to cancel the Notice Inviting Bids at any time, and further reserves the right to reject submitted Bids, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Bidder(s) as a result of preparing Bids under the Notice Inviting Bids shall be the sole responsibility of each bidder. The Notice Inviting Bids creates or imposes no obligation upon the City to enter a contract.
13. **CONTRACT PRICING:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth herein. The Bidder agrees to perform construction services for the City of San Diego in accordance with these contract documents for the prices listed below. The Bidder further agrees to guarantee the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee may be extended, by mutual consent of the parties, by the number of days required for the City to obtain all items necessary to fulfill all contractual conditions.
14. **SUBCONTRACTOR INFORMATION:**
- 14.1. **LISTING OF SUBCONTRACTORS.** In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" of the California Public Contract Code, the Bidder shall provide the **NAME** and **ADDRESS** of each Subcontractor who will perform work, labor, render services or who specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also state within the description, whether the subcontractor is a **CONSTRUCTOR, CONSULTANT** or **SUPPLIER**. The Bidder shall further state within the description, the **PORTION** of the work which will be performed by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement may result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3, "Subcontracts", which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.
- 14.2. **LISTING OF SUPPLIERS.** Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY)** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer. If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.

- 14.3. LISTING OF SUBCONTRACTORS OR SUPPLIERS FOR ALTERNATES.** For subcontractors or suppliers to be used on additive or deductive alternate items, in addition to the above requirements, bidder shall further note "ALTERNATE" and alternate item number within the description.
- 15. SUBMITTAL OF "OR EQUAL" ITEMS:** See Section 4-1.6, "Trade Names or Equals" in The WHITEBOOK and as amended in the SSP.
- 16. AWARD:**
- 16.1.** The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.
- 16.2.** Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening and award the Contract approximately within 7 days of receipt of properly executed Contract, bonds, and insurance documents.
- 16.3.** This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 17. SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 2-3, "SUBCONTRACTS" in The GREENBOOK and as amended in the SSP which requires the Contractor to self-perform not less than the specified amount. Failure to comply with this requirement shall render the bid **non-responsive** and ineligible for award.
- 18. AVAILABILITY OF PLANS AND SPECIFICATIONS:** Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/cip/>. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Public Works Contracts.
- 19. ONLY ONE BID PER CONTRACTOR SHALL BE ACCEPTED:** No person, firm, or corporation shall be allowed to make, file, or be interested in more than one (1) Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf. Any Bidder who submits more than one bid will result in the rejection of all bids submitted.
- 20. SAN DIEGO BUSINESS TAX CERTIFICATE:** The Contractor and Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, First floor and submit to the Contract Specialist upon request or as specified in the Contract Documents. Tax Identification numbers for both the Bidder and the listed Subcontractors must be submitted on the City provided forms within these documents.

**21. BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:**

- 21.1.** For bids \$250,000 and above, bidders shall submit Bid Security at bid time. Bid Security shall be in one of the following forms: a cashier's check, or a properly certified check upon some responsible bank; or an approved corporate surety bond payable to the City of San Diego for an amount of not less than 10% of the total bid amount.
- 21.2.** This check or bond, and the monies represented thereby, will be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into the contract and furnish the required final performance and payment bonds.
- 21.3.** The Bidder agrees that in the event of the Bidder's failure to execute this contract and provide the required final bonds, the money represented by the cashier's or certified check will remain the property of the City; and the Surety agrees that it will pay to the City the damages, not exceeding the sum of 10% of the amount of the Bid, that the City may suffer as a result of such failure.
- 21.4.** At the time of bid submission, bidders must upload and submit an electronic PDF copy of the aforementioned bid security. Whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the City of San Diego, the bid security must be uploaded to the City's eBidding system. Within twenty-four (24) hours after the bid due date and time, the first five (5) apparent low bidders must provide the City with the original bid security.
- 21.5.** Failure to submit the electronic version of the bid security at the time of bid submission AND failure to provide the original within twenty-four (24) hours may cause the bid to be rejected and deemed **non-responsive**.

**22. AWARD OF CONTRACT OR REJECTION OF BIDS:**

- 22.1.** This contract may be awarded to the lowest responsible and reliable Bidder.
- 22.2.** Bidders shall complete ALL eBid forms as required by this solicitation. Incomplete eBids will not be accepted.
- 22.3.** The City reserves the right to reject any or all Bids, to waive any informality or technicality in Bids received, and to waive any requirements of these specifications as to bidding procedure.
- 22.4.** Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City within 3 Working Days of the bid opening, written notice from the Bidder which shows proof of honest, credible, clerical error of a material nature, free from fraud or fraudulent intent; and of evidence that reasonable care was observed in the preparation of the Bid.

- 22.5. A bidder who is not selected for contract award may protest the award of a contract to another bidder by submitting a written protest in accordance with the San Diego Municipal Code.
- 22.6. The City of San Diego will not discriminate in the award of contracts with regard to race, religion, creed, color, national origin, ancestry, physical handicap, marital status, sex or age.
- 22.7. Each Bid package properly signed as required by these specifications shall constitute a firm offer which may be accepted by the City within the time specified herein.
- 22.8. The City reserves the right to evaluate all Bids and determine the lowest Bidder on the basis of the base bid and any proposed alternates or options as detailed herein.

**23. BID RESULTS:**

- 23.1. The availability of the bids on the City's eBidding system shall constitute the public announcement of the apparent low bidder. In the event that the apparent low bidder is subsequently deemed non-responsive or non-responsible, a notation of such will be made on the eBidding system. The new ranking and apparent low bidder will be adjusted accordingly.
- 23.2. To obtain the bid results, view the results on the City's web site, or request the results by U.S. mail and provide a self-addressed, stamped envelope. If requesting by mail, be sure to reference the bid name and number. The bid tabulations will be mailed to you upon their completion. The results will not be given over the telephone.

**24. THE CONTRACT:**

- 24.1. The Bidder to whom award is made shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance certificates specified by the City within 14 days after receipt by Bidder of a form of contract for execution unless an extension of time is granted to the Bidder in writing.
- 24.2. If the Bidder takes longer than 14 days to fulfill these requirements, then the additional time taken shall be added to the Bid guarantee. The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
- 24.3. If the Bidder to whom the award is made fails to enter into the contract as herein provided, the award may be annulled and the Bidder's Guarantee of Good Faith will be subject to forfeiture. An award may be made to the next lowest responsible

and reliable Bidder who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

**24.4.** Pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 14 Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.

**24.5.** The award of the Contract is contingent upon the satisfactory completion of the above-mentioned items and becomes effective upon the signing of the Contract by the Mayor or designee and approval as to form the City Attorney's Office. If the Apparent Low Bidder does not execute the Contract or submit required documents and information, the City may award the Contract to the next lowest responsible and reliable Bidder who shall fulfill every condition precedent to award. A corporation designated as the Apparent Low Bidder shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.

**25. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:** The Bidder shall examine carefully the Project Site, the Plans and Specifications, other materials as described in the Special Provisions, Section 2-7, and the proposal forms (e.g., Bidding Documents). The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, and as to the requirements of the Bidding Documents Proposal, Plans, and Specifications.

**26. CITY STANDARD PROVISIONS:** This contract is subject to the following standard provisions. See The WHITEBOOK for details.

**26.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.

**26.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.

**26.3.** The City of San Diego Municipal Code §22.3004 for Contractor Standards.

**26.4.** The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.

**26.5.** Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.

**26.6.** The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).

**26.7.** The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

**27. PRE-AWARD ACTIVITIES:**

**27.1.** The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified in the herein and in the Notice of Award. Failure to provide the information as specified may result in the Bid being rejected as **non-responsive**.

**27.2.** The decision that bid is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.



**PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND**

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**FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:**

Curtin Maritime Corporation, a corporation, as principal, and  
Berkley Insurance Company, a corporation authorized to do  
business in the State of California, as Surety, hereby obligate themselves, their successors and  
assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of  
Six Million Four Hundred Seventy Thousand Three Hundred \* for the faithful performance of the  
annexed contract, and in the sum of Six Million Four Hundred Seventy Thousand Three Hundred\* for the  
benefit of laborers and materialmen designated below.

**Conditions:**

\*Thirty One and 00/100 Dollars (\$6,470,331.00)

If the Principal shall faithfully perform the annexed contract with the City of San Diego,  
California, then the obligation herein with respect to a faithful performance shall be void;  
otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials  
for or performing labor in the execution of this contract, and shall pay all amounts due under the  
California Unemployment Insurance Act then the obligation herein with respect to laborers and  
materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit  
of all persons, firms and corporations entitled to file claims under the provisions of Article 2.  
Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil  
Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or  
referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby  
waives notice of same.

The Surety shall pay reasonable attorney's fees should suit be brought to enforce the  
provisions of this bond.


PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)

Dated October 11, 2017

Approved as to Form

Curtin Maritime Corporation

Principal

By 

STEVEN CHEW

Printed Name of Person Signing for Principal

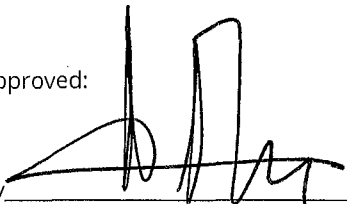
Mara W. Elliott, City Attorney

By   
Deputy City Attorney

Berkley Insurance Company  
Surety

By Katharine Janelle Snider  
Attorney-in-fact

Approved:

  
By  
Albert P. Recharny  
Deputy Director  
Public Works Contracts

520 Pike Street, #2929  
Local Address of Surety

Seattle, WA 98101  
Local Address (City, State) of Surety

206. 223. 5842  
Local Telephone No. of Surety

Premium \$ 51,113.00

Bond No. 0205482

POWER OF ATTORNEY  
BERKLEY INSURANCE COMPANY  
WILMINGTON, DELAWARE

NOTICE: The warning found elsewhere in this Power of Attorney affects the validity thereof. Please review carefully.

KNOW ALL MEN BY THESE PRESENTS, that BERKLEY INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, having its principal office in Greenwich, CT, has made, constituted and appointed, and does by these presents make, constitute and appoint: *Steven W. Palmer; Holly E. Ulfers; Roxana Palacios; Katharine Janelle Snider; or Kelly Christine Araujo of Kibble & Prentice Holding Company of Seattle, WA* its true and lawful Attorney-in-Fact, to sign its name as surety only as delineated below and to execute, seal, acknowledge and deliver any and all bonds and undertakings, with the exception of Financial Guaranty Insurance, providing that no single obligation shall exceed **Twenty Five Million and 00/100 U.S. Dollars (U.S.\$25,000,000.00)**, to the same extent as if such bonds had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office in their own proper persons.

This Power of Attorney shall be construed and enforced in accordance with, and governed by, the laws of the State of Delaware, without giving effect to the principles of conflicts of laws thereof. This Power of Attorney is granted pursuant to the following resolutions which were duly and validly adopted at a meeting of the Board of Directors of the Company held on January 25, 2010:

**RESOLVED**, that, with respect to the Surety business written by Berkley Surety Group, the Chairman of the Board, Chief Executive Officer, President or any Vice President of the Company, in conjunction with the Secretary or any Assistant Secretary are hereby authorized to execute powers of attorney authorizing and qualifying the attorney-in-fact named therein to execute bonds, undertakings, recognizances, or other suretyship obligations on behalf of the Company, and to affix the corporate seal of the Company to powers of attorney executed pursuant hereto; and said officers may remove any such attorney-in-fact and revoke any power of attorney previously granted; and further

**RESOLVED**, that such power of attorney limits the acts of those named therein to the bonds, undertakings, recognizances, or other suretyship obligations specifically named therein, and they have no authority to bind the Company except in the manner and to the extent therein stated; and further

**RESOLVED**, that such power of attorney revokes all previous powers issued on behalf of the attorney-in-fact named; and further

**RESOLVED**, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligation of the Company; and such signature and seal when so used shall have the same force and effect as though manually affixed. The Company may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Company, notwithstanding the fact that they may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, the Company has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 30<sup>th</sup> day of August, 2016.

Attest:

Berkley Insurance Company

(Seal)

By Ira S. Lederman  
Ira S. Lederman  
Executive Vice President & Secretary

By Jeffrey M. Hafter  
Jeffrey M. Hafter  
Senior Vice President

**WARNING: THIS POWER INVALID IF NOT PRINTED ON BLUE "BERKLEY" SECURITY PAPER.**

STATE OF CONNECTICUT )

COUNTY OF FAIRFIELD )

) ss:

Sworn to before me, a Notary Public in the State of Connecticut, this 30<sup>th</sup> day of August, 2016, by Ira S. Lederman and Jeffrey M. Hafter who are sworn to me to be the Executive Vice President and Secretary, and the Senior Vice President, respectively, of Berkley Insurance Company.

MARIA C. RUNDBAKEN  
NOTARY PUBLIC  
MY COMMISSION EXPIRES  
APRIL 30, 2019

Maria C. Rundbaken  
Notary Public, State of Connecticut

**CERTIFICATE**

I, the undersigned, Assistant Secretary of BERKLEY INSURANCE COMPANY, DO HEREBY CERTIFY that the foregoing is a true, correct and complete copy of the original Power of Attorney; that said Power of Attorney has not been revoked or rescinded and that the authority of the Attorney-in-Fact set forth therein, who executed the bond or undertaking to which this Power of Attorney is attached, is in full force and effect as of this date.

Given under my hand and seal of the Company, this 11<sup>th</sup> day of October, 2017

(Seal)

Vincent P. Forte  
Vincent P. Forte

WARNING - Any unauthorized reproduction or alteration of this document is prohibited. This power of attorney is void unless seals are readable and the certification seal at the bottom is embossed. The background imprint, warning and verification instructions (on reverse) must be in blue ink.

Please **verify the authenticity** of the instrument attached to this Power by:

Toll-Free Telephone: (800) 456-5486; or

Electronic Mail: [BSGInquiry@berkleysurety.com](mailto:BSGInquiry@berkleysurety.com)

---

Any written notices, inquiries, claims or demands to the Surety on the bond attached to this Power should be directed to:

Berkley Surety Group  
412 Mount Kemble Ave.  
Suite 310N  
Morristown, NJ 07960  
Attention: Surety Claims Department

**Or**

Email: [BSGClaim@berkleysurety.com](mailto:BSGClaim@berkleysurety.com)

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Please include with all communications the bond number and the name of the principal on the bond. Where a claim is being asserted, please set forth generally the basis of the claim. In the case of a payment or performance bond, please also identify the project to which the bond pertains.

Berkley Surety Group is an operating unit of W. R. Berkley Corporation that underwrites surety business on behalf of Berkley Insurance Company, Berkley Regional Insurance Company and Carolina Casualty Insurance Company.

## ATTACHMENTS

**ATTACHMENT A**  
**SCOPE OF WORK**

## SCOPE OF WORK

- 1. SCOPE OF WORK:** In order to maintain the navigational water safety in the bay, the intent of the project is to dredge the bottom of the bay to the original survey elevation and utilize the dredged material to fill the depleted/reuse areas within the bay in accordance with the Mission Bay Baseline Chart.

Approximately 64 acres of dredging would occur as part of this project creating approximately 122,000 cy to 220,850 cy of dredge material, with approximately 43 acres of impacted eelgrass, and approximately 73 acres of eelgrass being transplanted.

Borrow site fills and dredged areas will be planted to develop eelgrass habitat. The project provides for a 100 percent reuse of dredged materials to backfill existing borrow pits and replace material on source beaches with no material being exported from the bay.

- 1.1.** The Work shall be performed in accordance with:

- 1.1.1.** The Notice Inviting Bids and Plans numbered **39721-01-D** through **39721-15-D**, inclusive.

- 2. ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$9,360,000**.

- 3. LOCATION OF WORK: The location of the Work is as follows:**

See Attachment E – Location Map and Plans for detailed location of work.

- 4. CONTRACT TIME:**

- 4.1.** The total Contract Time for completion of the Work, including the Plant Establishment Period, shall be **220 Working Days**.

- 4.2.** The mobilization, excavation, dredging, demobilization activities, and all associated Work with dredge material removal and placement shall be completed within **110 Working Days** of the Notice To Proceed (NTP)

- 4.3.** The planting of eelgrass shall be completed within **132 Working Days** inclusive of the **30 Calendar Day** Plant Establishment Period. Eelgrass planting is best completed during the active growing season: March 1 – September 30

- 5. CONTRACTOR'S LICENSE CLASSIFICATION:** In accordance with the provisions of California Law, the Contractor shall possess valid, appropriate license at the time that the Bid is submitted. Failure to possess the specified license may render the Bid as **non-responsive** and ineligible for award.

- 5.1.** The City has determined that the following licensing classification are required for this contract:

- CLASS A

**ATTACHMENT B**  
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**ATTACHMENT C**  
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**ATTACHMENT D**  
**PREVAILING WAGES**

## PREVAILING WAGES

1. **PREVAILING WAGE RATES:** Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding \$25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding \$15,000, the Contractor and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below.
  - 1.1. **Compliance with Prevailing Wage Requirements.** Pursuant to sections 1720 through 1861 of the California Labor Code, the Contractor and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.
    - 1.1.1. Copies of such prevailing rate of per diem wages are on file at the City and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Contractor and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.
    - 1.1.2. The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.
  - 1.2. **Penalties for Violations.** Contractor and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed.

- 1.3. Payroll Records.** Contractor and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require its subcontractors to also comply with section 1776. Contractor and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Contractor is responsible for ensuring its subcontractors submit certified payroll records to the City.
- 1.3.1.** For contracts entered into on or after April 1, 2015, Contractor and their subcontractors shall furnish records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required by Labor Code section 1771.4.
- 1.4. Apprentices.** Contractor and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Contractor is held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.
- 1.5. Working Hours.** Contractor and their subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on design professionals and subcontractors of \$25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections 1810 through 1815.
- 1.6. Required Provisions for Subcontracts.** Contractor shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.
- 1.7. Labor Code Section 1861 Certification.** Contractor in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Contractor certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."
- 1.8. Labor Compliance Program.** The City has its own Labor Compliance Program authorized in August 2011 by the DIR. The City will withhold contract payments when payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has been established after an investigation by the City or other governmental entity that underpayment(s) have occurred. For questions

or assistance, please contact the City of San Diego's Equal Opportunity Contracting Department at 619-236-6000.

**1.9. Contractor and Subcontractor Registration Requirements.** This project is subject to compliance monitoring and enforcement by the DIR. As of March 1, 2015, no contractor or subcontractor may be listed on a bid or proposal for a public works project unless registered with the DIR pursuant to Labor Code section 1725.5. As of April 1, 2015, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, or enter into any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5. By submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Contractor shall provide proof of registration to the City upon request.

**1.9.1.** A Contractor's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

**ATTACHMENT E**  
**SUPPLEMENTARY SPECIAL PROVISIONS**

## **SUPPLEMENTARY SPECIAL PROVISIONS**

The following Supplementary Special Provisions (SSP) modifies the following documents:

1. The **2015 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2015 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
  - a) General Provisions (A) for all Contracts.

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### **SECTION 1 – TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS**

- 1-2 TERMS AND DEFINITIONS.** To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are as follows:

Excavation and Dredging:

7:00 AM to 7:00 PM, Monday through Saturday

Planting:

7:00 AM to 5:00 PM, Monday through Friday.

**ADD the following:**

- 108. Liquidated Damages** - Liquidated Damages are the daily amount set forth in the Contract to be deducted from the Contract Price to cover additional costs incurred by City because of the Contractor's failure to complete all the Contract work within the number of Days or Working Days specified or by the completion date specified.

### **SECTION 2 - SCOPE AND CONTROL OF WORK**

- 2-3.2 Self Performance.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall perform, with your own organization, Contract Work amounting to at least 35% of the Base Bid AND 35% of any alternates.

**2-7**                    **SUBSURFACE DATA.** To the "WHITEBOOK", ADD the following:

4.        In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests of subsurface conditions at the Work Site:
  - a)        Appendix F – Biological Resource and Water Quality Letter Report – December 2016
  - b)        Appendix G – Eelgrass Mitigation and Monitoring Plan – December 2016
  - c)        Appendix H – Photographic Survey
  - d)        Appendix I – Revised Mission Bay Maintenance Dredging Program, Characterization Study June 2015

**2-9.2**                    **Survey Service.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

The CITY will provide the pre-construction dredging survey.

**2-16**                    **CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM.** To the "WHITEBOOK", item 1, DELETE in its entirety.

### **SECTION 3 – CHANGES IN WORK**

**3-5.1**                    **Claims.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**ADD:  
3-5.1**

**Claims.**

1.        A Claim is a written demand by you that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a dispute arising under or relating to the Contract, including a breach of any provision thereof. A voucher, invoice, or other routine request for payment is not a Claim.
2.        A Claim shall conform to these specifications and may be considered after the City has previously denied a request by you for a Change Order seeking the demanded relief.
3.        You shall submit a Claim to the Engineer if a dispute occurs that arises from or relates to the Contract. The Claim shall seek all relief to which you assert you are entitled as a result of the event(s) giving rise to the dispute. Your failure to process a Claim in accordance with these specifications shall constitute a waiver of all relief associated with the dispute. Claims are subject to 6-11, "Right to Audit".



4. You shall continue to perform the Services and Work and shall maintain the Schedule during any dispute proceedings. The Engineer will continue to make payments for undisputed Services and Work.
5. The City's Claims process specified herein shall not relieve you of your statutory obligations to present claims prior to any action under the California Government Code.

**3-5.1.1 Initiation of Claim.**

1. You shall promptly, but no later than 30 Days after the event(s) giving rise to the Claim, deliver the Claim to the Engineer.
2. You shall not process a Claim unless the Engineer has previously denied a request by you for a Change Order that sought the relief to be pursued in the claim.

**3-5.1.1.1 Claim Certification Submittal.**

1. If your Claim seeks an increase in the Contract Price, the Contract Time, or both, submit with the Claim an affidavit certifying the following:
  - a) The Claim is made in good faith and covers all costs and delays to which you are entitled as a result of the event(s) giving rise to the Claim.
  - b) The amount claimed accurately reflects the adjustments in the Contract Price, the Contract Time, or both to which you believe you are entitled.
  - c) All supporting costs and pricing data are current, accurate, and complete to the best of your knowledge. The cost breakdown per item of Work shall be supplied.
  - d) You shall ensure that the affidavit is executed by an official who has the authority to legally bind you.

**3-5.1.2 Initial Determination.**

1. The Engineer will respond in writing to your Claim within 30 Days of receipt of the Claim.

**3-5.1.3 Settlement Meeting.**

1. If you disagree with the Initial Determination, you shall request a Settlement Meeting within 30 Days. Upon receipt of this request, the Engineer will schedule the Settlement Meeting within 15 Working Days.

**3-5.1.7 City's Final Determination.**

1. If a settle agreement is not reached, the City shall make a written Final Determination within 10 Working Days after the Settlement Meeting.
2. If you disagree with the City's Final Determination, notify the Engineer in writing of your objection within 15 Working Days after receipt of the written determination and file a "Request for Mediation" in accordance with 3-5.2, "Dispute Resolution Process".
3. Failure to give notice of objection within the 15 Working Days period shall waive your right to pursue the Claim.

**3-5.1.8 Mandatory Assistance.**

1. If a third party dispute, litigation, or both arises out of or relates in any way to the Services provided under the Contract, upon the City's request, you shall agree to assist in resolving the dispute or litigation. Your assistance includes, but is not limited to the following:
  - a) Providing professional consultations.
  - b) Attending mediations, arbitrations, depositions, trials, or any event related to the dispute resolution and litigation.

**3-5.1.8.1 Compensation for Mandatory Assistance.**

1. The City will reimburse you for reasonable fees and expenses incurred by you for any required assistance rendered in accordance with 3-5.1.8, "Mandatory Assistance" as Extra Work.
2. The Engineer will determine whether these fees and expenses were necessary due to your conduct or failure to act.
3. If the Engineer determines that the basis of the dispute or litigation in which these fees and expenses were incurred were the result of your conduct or your failure to act in part or in whole, you shall reimburse the City for any payments made for these fees and expenses.
4. Reimbursement may be through any legal means necessary, including the City's withholding of your payment.

**3-5.2.3 Selection of Mediator.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. A single mediator, knowledgeable in construction aspects and acceptable to both parties, shall be used to mediate the dispute.
2. To initiate mediation, the initiating party shall serve a Request for Mediation at the American Arbitration Association (AAA) on the opposing party.
3. If AAA is used, the initiating party shall concurrently file with AAA a "Request for Mediation" along with the appropriate fees, a copy of requested mediators marked in preference order, and a preference for available dates.
4. If AAA is selected to coordinate the mediation (Administrator), within 10 Working Days from the receipt of the initiating party's Request for Mediation, the opposing party shall file the following:
  - a) A copy of the list of the preferred mediators listed in preference order after striking any mediators to which they have any objection.
  - b) A preference for available dates.
  - c) Appropriate fees.
5. If the parties cannot agree on a mediator, then each party shall select a mediator and those mediators shall select the neutral third party to mediate the matter.

**3-5.3 Forum of Litigation.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. It is the express intention that all legal actions and proceedings related to the Contract or Agreement with the City or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in courts of the State of California for the County of San Diego.

#### **SECTION 4 - CONTROL OF MATERIALS**

**4-1.3.6 Preapproved Materials.** To the "WHITEBOOK", ADD the following:

3. You shall submit in writing a list of all products to be incorporated in the Work that are on the AML.

**4-1.6 Trade Names or Equals.** To the "WHITEBOOK", ADD the following:

11. You shall submit your list of proposed substitutions for an "equal" item **no less than 15 Working Days prior to the Bid due date** and on the City's Product Submittal Form available at:

<http://www.sandiego.gov/publicworks/edocref/index.shtml>

**SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK**

**6-1.1 Construction Schedule.** To the "WHITEBOOK", item 20, ADD the following:

The **30 Calendar Day** Plant Establishment Period is included in the stipulated Contract Time for planting of eel grass and shall be completed between March 1<sup>st</sup>, 2018 and August 31<sup>st</sup>, 2018.

To the " WHITEBOOK", item 22, subsection b, DELETE in its entirety and SUBSTITUTE with the following:

- b) A curve value percentage comparison between the Contract Price and the updated cash flow forecast for each Project ID included in the Contract Documents. Curve values shall be set on a scale from 0% to 100% in intervals of 5% of the Contract Time. Refer to the Sample City Invoice materials in the Contract Documents and use the format shown. Your invoice amounts shall be supported by this curve value percentage. For previous periods, use the actual values and percentages and update the curve value percentages accordingly.

**6-1.2.1 Construction Phasing.** To the "WHITEBOOK", ADD the following:

Step 1 – Dredging Work as described in Attachment E - Supplementary Special Provisions: Section 300

Step 2 – Dredging Acceptance as described in Attachment E - Supplementary Special Provisions: Section 6-8.2

Step 3 – Planting Work as described in Attachment E – Technicals: Section 1.05

Step 4 – Planting Acceptance as described in Attachment E – Technicals: Section 1.05

**6-2.1 Moratoriums.** To the "WHITEBOOK", ADD the following:

3. Do not Work in the areas where there is currently a moratorium issued by the City. The areas subject to moratorium are listed here:
  - a) Least Tern Nesting: In Mission Bay from April 1 to May 31 (inclusive).

If the dredging related Work as identified in the Construction documents is not complete by March 31st, 2018, the Contractor shall stop all dredging work and demobilize all related dredging operations. Accordingly, the Contractor shall remobilize immediately following the end of Summer moratorium (Labor Day 2018) and mobilize to complete the dredging related work. Demobilization and remobilization will be at the Contractor's cost.

- b) Summer Moratorium: Mission Bay from Memorial Day to Labor Day (inclusive).

Planting may continue into the summer moratorium.

**ADD:**

**6-3.2.1.1 Environmental Document.**

1. The City of San Diego Environmental Analysis Section (EAS) of the Development Services Department has prepared an **Mitigated Negative Declaration (MND)** for **Mission Bay Navigational Safety Dredging Project** No. 520687, as referenced in the Contract Appendix. You shall comply with all requirements of the **MND** as set forth in Appendix A.
2. Compliance with the City's environmental document shall be included in the Contract Price.

**6-7 TIME OF COMPLETION.** To the "WHITEBOOK", ADD the following:

2. Refer to **Attachment A - Scope of Work**.

**6-8.2 Acceptance.** To the "WHITEBOOK", ADD the following:

2. As soon as practicable after the completion of dredging zones, which in the opinion of the City, will not be affected by further dredging operations, each zone shall be surveyed by the City one time, with an anticipated nine total surveys covering aggregated areas. The Contractor shall remove shoals and lumps by dragging the bottom or by bucket or boom sweeping as directed by the City. The bottom contours shall have a maximum elevation of the design surface elevation and a minimum of the allowable overdepth elevation. The bottom shall be generally flat or minimally undulating with local slopes within the dredged area being less than 5:1 horizontal to vertical within 5 foot by 5 foot grid spacing as determined by dense point swath survey methodology. Where dredging or filling results in highly variable relief, Contractor shall knock down the relief by dragging a beam, sweeping the bottom with a bucket, or other means. All such work shall be restricted to the dredging area such that additional eelgrass damage beyond the work limits does not occur.

The City will prepare the final estimate based on the survey and provide to the Contractor. When areas are found to be in a satisfactory condition, the work therein shall be accepted as complete. Final estimates will be subject

to deductions or correction of deductions previously made because of excessive overdepth, earthwork/dredging outside or authorized areas, or disposal of material in an unauthorized manner.

Dredged areas that are found to be in non-conformance at an elevation above the plan elevation, shall be further dredged down to the plan elevation. Any additional surveys and volume estimates that are required to be performed by the City for verification of dredging depths shall be at the expense of the contractor.

**6-9 LIQUIDATED DAMAGES.** To the "WHITEBOOK", item 2, DELETE in its entirety and SUBSTITUTE with the following:

2. The execution of the Contract shall constitute agreement between you the City that the liquidated damage amount described in the table below is the minimum value of the costs and actual damage caused by your failure to complete the Work within the allotted time. Such sum shall not be construed as a penalty and may be deducted from your payments if such delay occurs.

<b>Contract Value</b>	<b>Liquidated Damage Daily Amount</b>
<b>Less than \$100,000</b>	<b>\$250</b>
<b>\$100,000 and more</b>	<b>\$1000</b>

The CONTRACTOR shall pay Liquidated Damages of \$1,000 per working day at the end of the allotted contract schedule.

**SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR**

**7-3 INSURANCE.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**7-3 INSURANCE.**

1. The insurance provisions herein shall not be construed to limit your indemnity obligations contained in the Contract.

**7-3.1 Policies and Procedures.**

1. You shall procure the insurance described below, at its sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.

2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.
3. You shall maintain this insurance for the duration of this Contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this Contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this Contract.
4. The payment for insurance shall be included in the Contract Price as bid by you. Except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any Work under this Contract until you have provided and the City has approved all required insurance.
5. Policies of insurance shall provide that the City is entitled to 30 Days (10 Days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

### **7-3.2 Types of Insurance.**

#### **7-3.2.1 Commercial General Liability Insurance.**

1. Commercial General Liability Insurance shall be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.
2. The policy shall cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).
3. There shall be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You shall maintain the same or equivalent insurance for at least 10 years following completion of the Work.

4. All costs of defense shall be outside the policy limits. Policy coverage shall be in liability limits of not less than the following:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
Other than Products/Completed Operations	\$2,000,000
Products/Completed Operations Aggregate Limit	\$2,000,000
Personal Injury Limit	\$1,000,000
Each Occurrence	\$1,000,000

**7-3.2.2 Commercial Automobile Liability Insurance.**

1. You shall provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles ("Any Auto").
2. All costs of defense shall be outside the limits of the policy.

**7-3.3 Rating Requirements.** Except for the State Compensation Insurance Fund, all insurance required by this Contract as described herein shall be carried only by responsible insurance companies with a rating of, or equivalent to, at least "A-, VI" by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

**7-3.3.1 Non-Admitted Carriers.** The City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers shall be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

**7-3.4 Evidence of Insurance.** Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document shall be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.



**7-3.5 Policy Endorsements.**

**7-3.5.1 Commercial General Liability Insurance.**

**7-3.5.1.1 Additional Insured.**

1. You shall provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
2. To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
3. The additional insured coverage for projects for which the Engineer's Estimate is \$1,000,000 or more shall include liability arising out of:
  - a) Ongoing operations performed by you or on your behalf,
  - b) your products,
  - c) your Work, e.g., your completed operations performed by you or on your behalf, or
  - d) premises owned, leased, controlled, or used by you.
4. The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 shall include liability arising out of:
  - a) Ongoing operations performed by you or on your behalf,
  - b) your products, or
  - c) premises owned, leased, controlled, or used by you.

**7-3.5.1.2 Primary and Non-Contributory Coverage.** The policy shall be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it shall provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

**7-3.5.1.3 Project General Aggregate Limit.** The policy or policies shall be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work shall reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit shall be in addition to the aggregate limit provided for the products-completed operations hazard.

**7-3.5.2 Commercial Automobile Liability Insurance.**

**7-3.5.2.1 Additional Insured.** Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form

or equivalent form providing coverage at least as broad, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

**7-3.6 Deductibles and Self-Insured Retentions.** You shall pay for all deductibles and self-insured retentions. You shall disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

**7-3.7 Reservation of Rights.** The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this Contract.

**7-3.8 Notice of Changes to Insurance.** You shall notify the City 30 Days prior to any material change to the policies of insurance provided under this Contract.

**7-3.9 Excess Insurance.** Policies providing excess coverage shall follow the form of the primary policy or policies e.g., all endorsements.

**7-4 NOT USED.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**7-4 WORKERS' COMPENSATION INSURANCE AND EMPLOYERS LIABILITY INSURANCE.**

1. In accordance with the provisions of §3700 of the California Labor Code, you shall provide at your expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.

2. Limits for this insurance shall be not less than the following:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
Bodily Injury by Accident	\$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 each employee
Bodily Injury by Disease	\$1,000,000 policy limit

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you shall

comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

**7-4.1. Waiver of Subrogation.** The policy or policies shall be endorsed to provide that the insurer will waive all rights of subrogation against the City and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from Work performed by the Named Insured for the City.

**7-4.2 Workers' Compensation Insurance for Work In, Over, or Alongside Navigable Waters.** In addition to the Workers' Compensation Insurance required under the General Conditions of this contract, the you shall provide additional insurance coverage for claims brought under the Longshore and Harbor Workers' Compensation Act, the Jones Act, general maritime law, and any other federal or state laws, resulting from the your Work in, over, or alongside navigable waters.

**7-5 PERMITS, FEES, AND NOTICES.** To the "WHITEBOOK", ADD the following:

2. The City will obtain, at no cost to you, the following permits:
  - a) California Regional Water Quality Control Board - Clean Water Act Section 401 Certification
  - b) U.S. Army Corp of Engineers- Combined Clean Water Act Section 404 Permit and Rivers & Harbors Act, Section 10 Permit
  - c) California Coastal Commission- Coastal Development Permit
  - d) City of San Diego Site Development Permit No. 1928412
3. The Contractor shall comply with conditions and requirements of the Corps of Engineers Permit, Coastal Development Permit, Regional Water Quality Control Board Certification, and other State, Park, City and Federal permits a provided by the City. The City will secure the permits for dredging and disposal of material as indicated. The permits are included as an appendix to this document. Ingress/egress and land and water public safety requirements are of particular interest for this project. Air quality permits shall be obtained by the Contractor. USCG Local Notice to Mariners and any USCG or City Lifeguard Services day marker, reflector, or lighting requirements for marine equipment is the responsibility of the Contractor.
4. Contractor is responsible for obtaining traffic control permit, APCD permit, and any regulatory fees associated with the use of equipment.
5. Contractor is responsible for obtaining Scientific Collector's Permit and Letter of Authorization to transplant eelgrass from the California

Department of Fish & Wildlife. At no additional cost to City, the Contractor shall be responsible to comply with any conditions placed on the work under these authorizations.

**7-8.6 Water Pollution Control.** To the "WHITEBOOK", ADD the following:

6. Based on a preliminary assessment by the City, this Contract is subject to WPCP.

**7-8.6.4 Water Pollution Control Plan (WPCP).** To the "WHITEBOOK", ADD the following:

7. The WPCP shall cover the BMPs to be implemented within the side staging area near the South Shores launch ramp and any areas that equipment and/or materials are stored on land.

**7-8.6.7 Environmental Protection Requirements.** To the "WHITEBOOK", ADD the following:

- A. All equipment operated within the water shall utilize biodegradable vegetable oil-based hydraulic fluids or EPA certified marine lubricants. Exceptions shall be made for small outboard-motored support skiffs.
- B. Tarps shall be placed underneath all equipment parked overnight or fueled on the beach.
- C. All marine equipment shall meet current State of California and APCD emissions standards and be appropriately permitted to be operated in San Diego.

**ADD:**

**7-9.3 Existing Beach Improvements.**

1. The Contractor shall temporarily move and salvage beach improvements (fire pits, trash cans, and signs) during construction. Beach improvements to be placed back to their original location after completion of work in beach area.

**7-9.3.1 Payment.**

1. The payment for restoration of existing beach site appurtenances improvements shall be included in the Bid item for "Salvage and Relocate Existing Trash Bins and Fire Pits", and shall be measured per each item relocated and installed.
2. The payment for restoration of existing signs shall be included in the Bid item for "Adjust Existing Sign", and shall be measured per each sign relocated and installed.

**ADD:**

**7-16.1.3 Weekly Updates Recipients.**

1. Submit a weekly correspondence with updates, traffic control issues and locations, lane closures, and any other pertinent information (with additional contact names given during award process) to the following recipients:

George Freiha, Senior Engineer, [GFreiha@sandiego.gov](mailto:GFreiha@sandiego.gov)  
Tamara Miller, Project Manager, [TAMiller@sandiego.gov](mailto:TAMiller@sandiego.gov)  
Resident Engineer, TBA, [XXX@sandiego.gov](mailto:XXX@sandiego.gov)

**7-16.3.1 Exclusive Community Liaison Services.** To the "WHITEBOOK", ADD the following:

2. You shall retain an Exclusive Community Liaison for the Project that shall implement Work in accordance with the specifications described in 7-16.2 "Community Outreach Services" and 7-16.3 "Exclusive Community Liaison Services", including coordination with the City's Permit Events Coordinator, Marilou Fedalizo at 619-235-5929, [MFedalizo@sandiego.gov](mailto:MFedalizo@sandiego.gov)

**7-20 ELECTRONIC COMMUNICATION.** To the "WHITEBOOK", ADD the following:

2. Virtual Project Manager shall be used on this Contract.

**7-21.1 General.** To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

3. During the construction phase of projects, the minimum waste management reduction goal is 90% of the inert material (a material not subject to decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, and etc.) and 65% of the remaining project waste. You shall provide appropriate documentation, including a Waste Management Form attached as an appendix, and evidence of recycling and reuse of materials to meet the waste reduction goals specified.

**SECTION 9 - MEASUREMENT AND PAYMENT**

**9-3.4.1 Payment.** To the "WHITEBOOK", item 1, DELETE in its entirety and SUBSTITUTE with the following:

1. When a Bid item has been provided for "Mobilization", payment for mobilization Work shall not exceed 6% of the Contract Price. Half of the payment for mobilization Work shall be distributed equally over the first 2 progress payments up to the bid amount of "Mobilization" Bid item but

shall not exceed 3% of the Contract Price. The remaining half of the payment for mobilization work shall be made as part of the Final Payment but shall not exceed 3% of the Contract Price. If the Bid item for "Mobilization" exceeds 6% of the Contract Price, any such differential amount up to the bid amount, shall be paid as part of the Final Payment.

**9-3.7 Compensation Adjustments for Price Index Fluctuations.** To the "WHITEBOOK" ADD the following:

5. This Contract is not subject to the provisions of The "WHITEBOOK" for Compensation Adjustments for Price Index Fluctuations for paving asphalt.

### **SECTION 300 - EARTHWORK**

**300-2 UNCLASSIFIED EXCAVATION.** DELETE in its entirety and SUBSTITUTE with the following:

**300-2.1 General.** Dredge to contours, elevation, and dimensions indicated on the Plans. Phasing of material excavation and placement shall be adhered to unless otherwise approved by the City.

**300-2.2 Tolerances.** A tolerance of 1 foot below the prescribed dredging depth will be allowed in the dredging in the west basin sites (non-payable) and 2-foot below the prescribed depths basin site No. 12 (payable).

**300-2.3 Side Slopes.** Dredging on side slopes shall follow, as closely as practicable, the lines indicated or specified. A 1 foot vertical and 10 foot horizontal allowance will be made for dredging beyond the indicated or specified side slopes and box cuts on 2 foot steps are acceptable to slope cuts.

**300-2.4 Basis for Bids.** Base bids on an estimated quantity of dredged material removed, transported, and placed within cut and fill tolerances and based on the volume determined from the dredge cut. All elements of the dredging and placement are considered to be included in the calculated volume and all aspects of volume quantified work shall be completed for payment to be due (e.g., 1) material cut but still in the scow is not payable; 2) material cut within allowable tolerances, but placed outside of payable tolerances is not payable). Dredged and placed volumes may be adjusted upward or downward from the bid basis and are not subject to negotiation and change in unit pricing.

The earthwork/dredging conditions specified and indicated describe conditions that are known. However, the Contractor is responsible for other conditions encountered which are not unusual when compared to the conditions recognized

in the earthwork/dredging business as usual in earthwork/dredging activities such as those required under this contract.

Payment will be at the contract unit price per cubic yard, multiplied by total cubic yards of acceptable dredging and placement based on pre- and post-construction surveys of the dredge areas and acceptance of cut and fill tolerances being met.

- 300-2.5**      **Inspection.** Inspect the work, keep records of work performed, and ensure that gages, targets, ranges, and other markers are in place and usable for the intended purpose. Furnish, at the request of the City, boats, boatmen, laborers, and materials necessary for inspecting and surveying the work. When required, provide transportation for the City and inspectors to and from the dredging area and between the dredging plant and adjacent points on shore or in the water.
- 300-2.6**      **Plant.** Maintain the plant, barges, pipelines, and associated equipment to meet the requirements of the work. Promptly repair leaks or breaks along pipelines. Remove dredged material placed outside limits due to leaks and breaks at the Contractors expense.
- 300-2.7**      **Method of Communication.** Provide a system of communication between the dredge crew and the crew at the disposal area. A portable two-way radio is acceptable.
- 300-2.8**      **Salvaged Material.** Articles of value, which are brought to the surface during dredging operations, shall remain or become the property of the City and shall initially be deposited on shore at a convenient location near the site of the work, as directed.
- 300-2.9**      **Safety of Structures.** The prosecution of work shall ensure the stability of structures lying on or adjacent to the site of the work, insofar as structures may be jeopardized by dredging operations. Repair damage resulting from dredging operations, insofar as such damage may be caused by variation in locations or depth of dredging, or both, from that indicated or permitted under the contract. Anchoring, spudding, or attaching to the bridges, piles or abutments will not be allowed.
- 300-2.10**     **Plant Removal.** Upon completion of the work, promptly remove dredge plant, including ranges, buoys, piles, and other markers or obstructions.
- 300-2.11**     **Measurement.** Quantities of Dredging shall be based on the amounts of material (per cubic yard) removed from the dredging areas and subsequently transported to and placed on the beach or reuse areas. These quantities shall be determined by comparing pre-removal surveys and post removal surveys (performed one time per location by the City) and calculating the actual volumes of each material type that has been excavated and/or dredged to the pay depth. In order to prepare the replanted dredge areas for restoration planting, dredging in the dredge sites (1, 2, 3, 4, 5A, 6 and 7) will be cut to an overdredge depth of not more than 1-foot below target design grade.

There will be no payment for material dredged 1 foot below the pay depth for Dredge Areas (1, 2, 3, 4, 5A, 6 and 7) to the West as shown on drawings.

There will be payment for a 2 feet allowable overdredge below the pay depth for Dredge Area 12 to the East as shown on drawings.

Progress surveys comparing pre- and post-removal conditions shall be the basis of all volume calculations.

**300-2.12**      **Payment.** Payment for Earthwork/Dredging shall include removal, transportation and placement to the lines and grades shown on the Drawings including allowable overdredge. Dredging will be paid at the unit price bid per cubic yard for "Dredge and Disposal at Reuse" and "2-feet Paid Overdredge and Disposal" in the Proposal and Bid. See sheet G-2 of the Construction Drawings for locations.

1.      No payment for 1-foot overdredge shall be included in the bid. See sheet G-2 of the Construction Drawings for locations.

**300-4**            **UNCLASSIFIED FILL.** DELETE in its entirety and SUBSTITUTE with the following:

**300-4.1**            **General.** Fill and backfill to contours, elevations, and dimensions indicated. The existing beach contours are variable. The intent of the placement is to extend the existing berm seaward by the distance indicated on the Plans, and along the beach for a distance sufficient to accommodate the dredged volume. The fill will be placed hydraulically and mechanically manipulated to achieve the final grading.

**300-4.2**            **Tolerances.** A tolerance of 1 foot below the prescribed grade will be allowed in the beach placement. The horizontal and vertical top of beach shall meet adjacent park surfaces such that there is no scarp or drop off or step up at the edge of the adjacent parkland turf or infrastructure.

**300-4.3**            **Staking.** A tolerance of 1 foot below the prescribed grade will be allowed in the beach placement, except that the daylight line at the upland park margin shall meet seamlessly with the existing park lands in a manner that does not create a step up or down. Minor slope variance from design is allowable in this case.

**300-4.4**            **Beach Disposal Site Preparation.** Prior to placement of materials on beach, contractor shall remove and dispose of any accumulated trash or heavy buildup of organic materials. Fire rings and any signage shall be temporary relocated and replaced as needed to complete the work.

**300-4.5**            **Public Access.** The contractor shall maintain public access to the beach and water during operations and shall limit impediments to bay use. Contractor shall not block trails, parking lots, or waterways in a manner that disrupts the public use. However, Contractor may provide directed access to the public over pipelines at specific crossing locations or may maintain a work zone around equipment of up to 100 feet as may be necessary to protect the safety of the public and the Contractor's staff.



**300-4.6 Payment.** Payment for excavation of Beach Sand, transportation to the designated beach sites, reuse areas, filling, and grading as may be needed to complete the beach configurations shown, will be paid at the unit price bid per cubic yard for "Beach Excavation and Reuse" in the Proposal and Bid.

**SECTION 601 – TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE  
WORK ZONES**

**601-1 GENERAL.** To the "WHITEBOOK", ADD the following:

14. Contractor shall provide temporary traffic control devices and flagmen when mobilization and demobilization equipment impact vehicular and pedestrian access within the parks, parking lots, public roadway, paths, and sidewalks.
15. Contractor shall provide temporary flagmen closure of the South Shores trail if and when equipment needs to be craned onto or off of a floating dredge barge.
16. Contractor shall close the segment of beach that is presently being worked on with temporary placement of barricades and flagging.
17. Contractor shall have no more than three pieces of equipment active on the beach at any given time.
18. During dredging and planting related activities, the Contractor shall implement a temporary 5-mph transit speed within 300 feet of construction activities as requested by the Lifeguards and U.S.C.G. through issuance of a Local Notice to Mariners and a restricted use permit.

**601-6 PAYMENT.** To the "WHITEBOOK", ADD the following:

6. The payment for "Traffic Control" shall be paid based on as an allowance line item and shall be paid after the Contractor has provided receipts and invoices to the City.

**SECTION 802 – NATIVE HABITAT PROTECTION, INSTALLATION, MAINTENANCE, AND  
MONITORING**

**802-2.1 Project Biologist.** To the "WHITEBOOK", ADD the following:

5. The City will retain a qualified Project Biologist to perform biological monitoring work for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the Project Biologist.

**EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP) SECTION A - GENERAL  
REQUIREMENTS**

**4.1 Nondiscrimination in Contracting Ordinance.** To the "WHITEBOOK", subsection 4.1.1, paragraph (2), sentence (1), DELETE in its entirety and SUBSTITUTE with the following:

You shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers.

**END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)**

## TECHNICALS

## **PART 1 GENERAL**

### **1.01 SCOPE**

- A. The CONTRACTOR shall collect, prepare planting units, and transplant eelgrass in accordance with the Contract Documents.
- B. The collection of transplant materials, placement, maintenance, and monitoring methods shall fully comply with applicable regulatory approvals including the U.S. Army Corps of Engineers section 404/10 permit, the National Marine Fisheries Service Essential Fish Habitat (EFH) Consultation, the California Coastal Commission Coastal Development Permit, the Regional Water Quality Control Board Section CWA 401 Water Quality Certification, and the City Mitigated Negative Declaration and Site Development Permit issued to the City directly, and the California Fish & Game Code Section 6400 Letter of Authorization and CFGC Section 650 Scientific Collectors Permit as issued to CONTRACTOR.
- C. Work shall include, but is not limited to, all labor, tools, materials, equipment, and incidentals required to complete activities shown on the Drawings, described in these specifications, and as directed by the ENGINEER in writing. No deviations from the plans or these specifications shall be allowed without written approval from the ENGINEER. The Contractor shall plan for appropriate crew sizes supplied with necessary equipment to complete the required work for the collection and placement of transplants, as described in this Section.
- D. CONTRACTOR shall be independently responsible for compliance with all reporting and operational requirements of the Letter of Authorization (LOA) and Scientific Collector's Permit (SCP) issued to the CONTRACTOR by the California Department of Fish & Wildlife (CDFW).

### **1.02 DEFINITIONS**

- A. **PLANTING PERIOD ACCEPTANCE:** Planting Period Acceptance is the milestone when all work associated with the transplanting of eelgrass is completed to the OWNER's satisfaction.
- B. **HEALTHY PLANTS:** Healthy plants shall be those that are of good form, are free of disease, are robust, and exhibit vigorous growth. Harvested turions for preparation of planting bundles should have a minimum of four nodes and internodes on each rhizome, good root development, minimum flooded lacunae, and shall not be inflorescent shoots. Plants shall not be highly stressed.

### **1.03 QUALIFICATIONS**

- A. The City recommends that all work shall be done by an experienced Contractor familiar with eelgrass restoration and industry methods and standards for such work. The Contractor shall employ modern equipment and state of the art methods and techniques. The Contractor shall have a minimum of 3 years of applicable on-the-job experience with at least three successful large-scale (greater than 1 acre) eelgrass restoration plantings in California.

- B. Contractor shall obtain a valid California Scientific Collection Permit authorizing the collection of eelgrass for transplant purposes and a Letter of Authorization issued by the marine region of the CDFW for the planting of eelgrass. Contractor shall demonstrate capacity to obtain these authorizations through submittal of past authorizations for prior restoration projects identified in 1.03(A) at the time of bid.

#### **1.04 SUBMITTALS**

- A. The equipment shall be in compliance with Agency Permits and the Contractor shall submit a descriptive list of equipment to be used during the collection, preparation, transportation, and planting of transplant material. The proposed equipment shall be adequate to provide for maintenance of plants in flowing sea water or in well flushed bay waters during all periods of plant handling, maintenance of planting area safety and positioning control, and adequate to support planting of planting units within the defined planting unit spacing required.
- B. Records:
- Transplant collection activities shall be documented in daily transplant reports that include information on the donor site locations, numbers of planting units prepared, number of planting units planted, and maps illustrating the extent of planting completed.
  - As-built drawings indicating where transplants were installed, when, and in what areas.

#### **1.05 INSPECTIONS**

- A. The Contractor shall notify the ENGINEER at least 10 working days prior to each anticipated inspection. The ENGINEER may at any time inspect work without notification. The following are key inspection events:
- Initial collection and preparation of transplant materials.
  - Planting layout acceptance inspection.
  - Installation Inspection: This inspection shall be performed by the ENGINEER in two parts at the end of the Planting Period for each dredge or fill area numbered in project plans. A preliminary punch list inspection of the planted areas will be performed. This inspection will be followed by the final verification inspection upon CONTRACTOR notice of punch list items completion. During the preliminary inspection, unsatisfactory conditions and deficiencies will be listed in a punch list. The following items will be reviewed: health of transplanted material, proper location and spacing, orientation and placement of transplanted material, and restoration of areas incidentally disturbed during dredging and transplanting.
  - During the verification re-inspection, the ENGINEER will evaluate completion of the punch list items to ensure they have been corrected. A "Final Planting Acceptance" will be issued after all planting requirements have been

satisfactorily completed and approved by the ENGINEER. If the ENGINEER is required to perform additional punch list items verification inspections because any of the punch list items are not complete during the first verification inspection, the CONTRACTOR shall be responsible for any expenses associated with the additional inspection. Partial acceptance of any area or any item will not be issued. Written, signed and dated "Final Planting Acceptance" issued by the ENGINEER shall constitute the beginning date of a **30 Calendar Day** Plant Establishment Period.

- **Post Plant Establishment Period Inspection:** This inspection shall be performed by the ENGINEER **30 Calendar Days** after the date of the Final Planting Acceptance. The inspection shall verify the continued presence, survival, and growth of not less than 80 percent of the transplanted planting units in a well distributed coverage within each of the planting sites. Because thermal stress during transplant unit preparation, excessive leaf or rhizome damage, inadequate meristematic tissue in units, rhizome strangulation, or inadequate anchor positioning is not easy to detect at the time of planting, the **30 Calendar Day** Plant Establishment Period will allow mortality associated with poor plant handling to be detected while avoiding Contractor risk associated with restoration site selection. Should 80 percent of the planting units not be present **after 30 Calendar Days**, Contractor shall be required to replant and areas failing to meet the survival criteria and reinitiate the acceptance process to reach the required goal. Additional replanting and inspection will be at the Contractor's expense.
  
- **60 MONTH REVEGETATION MAINTENANCE AND MONITORING PROGRAM**  
  
When the PEP is completed to the satisfaction of the Engineer, the 60-month revegetation M&M program shall commence in accordance with the Contract Documents.

#### **1.06 RECOMMENDED TRANSPORTATION, STORAGE AND HANDLING**

- A. **Transportation:** Transplant material shall be protected from desiccation, weather and contamination during harvest, movement, preparation of units and transfer to planting areas.
  
- B. **Storage:** Transplant material shall not be stored for more than 48 hours between harvest, unit preparation, and planting. Storage shall be within cool circulating bay water either within the Bay waters or in flow-through tanks. At no point of the transplant handling shall material be stored out of cool circulating water for more than an hour and material shall always be shielded from intense sun heat. Transplant material shall be stored in clean Bay water with adequate flushing to maintain vigor of the transplant material, cool temperature similar to the Bay shall be maintained to the extent practical. However, water baths holding eelgrass shall not be allowed to rise to temperatures in excess of 24 degrees Celsius at any time.

- C. Handling: Transplants shall be handled in a fashion that prevents desiccation, anoxia, crushing, breakage, or other damage during all phases of the transplant procedures. Plants shall be handled in a manner that does not unduly damage rhizomes and leaves resulting in abrasion damage, broken lacunae or other physical damage beyond that which is standard in major eelgrass restoration projects.
- D. Transplant unit leaves shall be cut to a length of 18 inches to avoid physical damage to leaf vascular tissues and lacunae during the planting process.

#### **1.07 RECOMMENDED TIMES AND CONDITIONS**

- A. Transplanting Conditions: Transplanting shall be performed only during periods when beneficial results can be obtained. When heat, rainfall, or other unsatisfactory conditions prevail that would threaten the capacity to maintain eelgrass at suitable temperatures and salinities during the periods of time planting units are being prepared the work shall be stopped as directed by the ENGINEER. The CONTRACTOR shall be prepared to transplant at the time when all conditions (weather, water conditions, and temperature) are acceptable.
- B. Weather Limitations: Proceed with the collection and placement of transplant materials only when existing and forecasted weather conditions permit transplanting to be performed when beneficial and optimum results may be obtained. The collection or placement of transplants shall not commence on days when the official weather report predicts 86°F or higher temperature during any time of the day.
- C. Transplant materials shall be inspected for non-native, invasive species. If such species are identified, they will be removed from the transplant material and destroyed.

### **PART 2 PRODUCTS**

#### **2.01 EELGRASS TRANSPLANTS**

- A. Eelgrass transplants shall be harvested by hand from moderate to dense patches of healthy plants using the "bare-root method" to minimize substrate and remaining shoot disturbance. Collection shall occur by first removing substrate from around the rhizome, then uprooting the rhizome with roots and blades attached. This method creates minimum disturbance to surrounding eelgrass and substrate. Thick rhizomes, about 4 to 6 inches long, with multiple shoots and long blades, rather than thinner rhizomes with single shoots or short blades shall be selected. A gentle vibrating motion shall be used while lifting the rhizomes from the sediments, resulting in liquefaction around the rhizomes and roots to allow extraction of viable plant material with a minimum of four healthy nodes and internodal segments and well-formed roots and root initiates. These bare-root shoots shall be placed in appropriate containers where separation and counting of individual shoots shall occur before placing them in totes or coolers full of Bay water. Harvest of donor material from the donor beds shall be restricted to 10% or less of total rhizome count per square meter.
- B. Individual shoots shall be cut from harvested rhizomes.

- C. The individual shoots will be processed into planting units of 6-8 shoots interlaced and attached to a paper stick anchor (3.5 inches long and 1/8-inch diameter) using a length of cotton twine. The twine shall be knotted onto the base of the shoots and knotted onto the paper stick anchor firmly but not so tight as to damage the individual shoots or anchor. The length of twine between the anchor and the shoots shall be 3 inches. Following anchor attachment, the leaves of each planting unit shall be cut to a length of approximately 18 inches to facilitate handling and planting. Planting units shall be placed in coolers filled with seawater for transportation.

## **PART 3 PLANTING**

### **3.01 PLANTING OF EELGRASS TRANSPLANTS**

- A. Planting shall not begin until the CONTRACTOR has received approval by ENGINEER to begin planting.
- B. Pre-planting survey will be provided by ENGINEER within 60 days prior to the start of planting.
- C. Eelgrass transplants will only be placed in areas of suitable substrate, consisting of predominantly sand or mud, with a minimum depth of 5 inches.
- D. Any unusual substrate condition that will require special treatment shall be reported to the ENGINEER.
- E. No planting shall be done when current velocity exceeds 2 knots or during active measureable rainfall.
- F. Individual planting units shall be installed by excavating a hole (using a garden trowel or by hand) approximately equal to the size of the unit, and inserting the planting unit into the hole so that the rhizomes are at a depth of approximately 1 inch below the substrate. The hole is then back-filled with substrate. Leaves are then pulled free of any sediment and stood upright from the bottom.
- G. Eelgrass plantings shall be placed to achieve a density of 1 transplant unit per square meter within the designated planting areas.

### **3.02 CLEANUP**

- A. Upon daily completion of transplant collection and planting operations, the portion of the Site used for a work or storage area by the CONTRACTOR shall be cleaned of all debris, superfluous materials, equipment, and garbage.



## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT**

- A. EELGRASS PLANTING shall be measured by the ACRE or portion thereof of restored eelgrass planting as determined by the survey measurements. 1 acre shall support 4,047 planting units spaced at 1 meter centers.

- 4.02** The actual quantity of this item will be determined by the Engineer based on conditions found at the time of construction. The estimated bid quantity shall not be subject to adjustment regardless of quantity used or if none is used **PAYMENT**

- B. Payment for EELGRASS PLANTING constitutes full compensation for furnishing all labor, materials, equipment, tools, and incidentals; and for doing all the work of EELGRASS PLANTING complete in place, including but not limited to acquisition and compliance with harvesting and planting authorizations, harvesting of donor materials, planting unit preparation and handling, and planting, as well as other associated work as defined within these Contract Documents, with the sole exclusion of the payments to be made as defined herein for the other items in the BID SCHEDULE.

**END OF SECTION**

**SUPPLEMENTARY SPECIAL PROVISIONS**

**APPENDICES**

**APPENDIX A**  
**MITIGATED NEGATIVE DECLARATION**



THE CITY OF SAN DIEGO

## MITIGATED NEGATIVE DECLARATION

Project No. 520687  
SCH No. 2017021052

**SUBJECT: MISSION BAY PARK NAVIGATIONAL SAFETY DREDGING:** A SITE DEVELOPMENT PERMIT (SDP) for 63 acres of dredging within Mission Bay and impacts to wetlands. Proposed work includes maintenance dredging, reuse of dredged sediment, and temporary staging areas within bay water and vacant upland within 76 acres of bay water and sand beach. The impact to 43 acres of eelgrass will be restored post-construction. The project site is located within the Mission Bay Park community area and City Council District 2.

UPDATE: The Mitigated Negative Declaration (MND) and Initial Study have been revised to address comments that were provided by the U.S. Fish and Wildlife Service on the draft MND; however, these revisions are clarifications and amplifications to the analysis and conclusions of the draft MND. The physical scope of the project, project environmental impacts, proposed mitigation measures, and conclusions of the draft Mitigated Negative Declaration are not substantially affected by the revisions. Therefore, recirculation of the draft MND is not required pursuant to Section 15073.5 of CEQA Guidelines. Double underline has been used to denote additions to the MND and Initial Study and strikethrough has been used to denote deletions from the MND and initial study.

- I. PROJECT DESCRIPTION: See attached Initial Study.
- II. ENVIRONMENTAL SETTING: See attached Initial Study.
- III. DETERMINATION:

The City of San Diego conducted an Initial Study which determined that the proposed project could have a significant environmental effect in the following areas(s): **Biological Resources, Water Quality and Land Use (MHPA Adjacency)**. Subsequent revisions in the project proposal create the specific mitigation identified in Section V of this Mitigated Negative Declaration. The project as revised now avoids or mitigates the potentially significant environmental effects previously identified, and the preparation of an Environmental Impact Report will not be required.

IV. DOCUMENTATION: The attached Initial Study documents the reasons to support the above Determination.

V. MITIGATION, MONITORING AND REPORTING PROGRAM:

**A. GENERAL REQUIREMENTS – PART I  
Plan Check Phase (prior to permit issuance)**

1. Prior to the Issuance of a Notice To Proceed (NTP) for a subdivision, or any construction permits, such as Demolition, Grading or Building, or beginning any construction related activity on-site, the Development Services Department (DSD) Director's Environmental Designee (ED) shall review and approve all Construction Documents (CD), (plans, specification, details, etc.) to ensure the MMRP requirements are incorporated into the design.

2. In addition, the ED shall verify that the MMRP Conditions/Notes that apply ONLY to the construction phases of this project are included VERBATIM, under the heading, "**ENVIRONMENTAL/MITIGATION REQUIREMENTS**."

3. These notes must be shown within the first three (3) sheets of the construction documents in the format specified for engineering construction document templates as shown on the City website:

<http://www.sandiego.gov/development-services/industry/standtemp.shtml>

4. The **TITLE INDEX SHEET** must also show on which pages the "Environmental/Mitigation Requirements" notes are provided.

5. **SURETY AND COST RECOVERY** – The Development Services Director or City Manager may require appropriate surety instruments or bonds from private Permit Holders to ensure the long term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.

**B. GENERAL REQUIREMENTS – PART II  
Post Plan Check (After permit issuance/Prior to start of construction)**

**1. PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.** The PERMIT HOLDER/OWNER is responsible to arrange and perform this meeting by contacting the CITY RESIDENT ENGINEER (RE) of the Field Engineering Division and City staff from MITIGATION MONITORING COORDINATION (MMC). Attendees must also include the Permit holder's Representative(s), Job Site Superintendent and the following consultants:

***Qualified Biologist***

**Note:**

**Failure of all responsible Permit Holder's representatives and consultants to attend shall require an additional meeting with all parties present.**

**CONTACT INFORMATION:**

- a) The PRIMARY POINT OF CONTACT is the **RE** at the **Field Engineering Division – 858-627-3200**
- b) For Clarification of ENVIRONMENTAL REQUIREMENTS, it is also required to call **RE and MMC at 858-627-3360**

**2. MMRP COMPLIANCE:** This Project, Project Tracking System (PTS) #520687 and /or Environmental Document # 520687, shall conform to the mitigation requirements contained in the associated Environmental Document and implemented to the satisfaction of the DSD's Environmental Designee (MMC) and the City Engineer (RE). The requirements may not be reduced or changed but may be annotated (i.e. to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc)

**Note:**

**Permit Holder's Representatives must alert RE and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts must be approved by RE and MMC BEFORE the work is performed.**

**3. OTHER AGENCY REQUIREMENTS:** Evidence of compliance with all other agency requirements or permits shall be submitted to the RE and MMC for review and acceptance prior to the beginning of work or within one week of the Permit Holder obtaining documentation of those permits or requirements. Evidence shall include copies of permits, letters of resolution or other documentation issued by the responsible agency.

*Not Applicable*

**4. MONITORING EXHIBITS**

All consultants are required to submit , to RE and MMC, a monitoring exhibit on a 11x17 reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the specific areas including the **LIMIT OF WORK**, scope of that discipline's work, and notes indicating when in the construction schedule that work will be performed. When necessary for clarification, a detailed methodology of how the work will be performed shall be included.

**NOTE:**

**Surety and Cost Recovery – When deemed necessary by the Development Services Director or City Manager, additional surety instruments or bonds from the private Permit Holder may be required to ensure the long term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.**

**5. OTHER SUBMITTALS AND INSPECTIONS:**

The Permit Holder/Owner's representative shall submit all required documentation, verification letters, and requests for all associated inspections to the RE and MMC for approval per the following schedule:

<i>Issue Area</i>	<i>Document submittal</i>	<i>Assoc Inspection/Apv l</i>	<i>Notes</i>
Pre Con Meeting	Request letter	MMC approval	3 days prior to pre con
Biology	Consultant Qual. Letter	MMC approval	
	Bio. Monitoring Exhibit.	MMC approval	
	Protocol or other Survey	MMC approval	
Biology	Limit of Work Ver. Letter	MMC inspection	
Final approval	Request for Final	Final Inspection	1 week after request
Bond Release	Request letter	LEMA verification	2 week minimum LEMA

### C. SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS

#### **BIOLOGICAL RESOURCES**

##### 1. BIOLOGICAL RESOURCE PROTECTION DURING CONSTRUCTION

###### I. Prior to Construction

- A. **Biologist Verification** -The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist) as defined in the City of San Diego's Biological Guidelines (2012), has been retained to implement the project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the project.
- B. **Preconstruction Meeting** - The Qualified Biologist shall attend the preconstruction meeting, discuss the project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.
- C. **Biological Documents** - The Qualified Biologist shall submit all required documentation to MMC verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, Multiple Species Conservation Program (MSCP), Environmentally Sensitive Lands Ordinance (ESL), project permit conditions; California Environmental Quality Act (CEQA); endangered species acts (ESAs); and/or other local, state or federal requirements.
- D. **BCME** -The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME) which includes the biological documents in C above. In addition, include: restoration/revegetation plans, plant salvage/relocation requirements (e.g., coastal cactus wren plant salvage, burrowing owl exclusions, etc.), avian or other wildlife surveys/survey schedules (including general avian nesting and USFWS protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City ADD/MMC. The BCME shall include a site plan, written and graphic depiction of the project's biological

mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents.

- E. **Avian Protection Requirements** - To avoid any direct impacts to raptors and/or any native/migratory birds, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to City DSD for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and Federal Law (i.e. appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's MMC Section and Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.
- F. **Resource Delineation** - Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME. This phase shall include flagging plant specimens and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora & fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.
- G. **Education** - Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas, etc.).

## II. During Construction

- A. **Monitoring** - All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on "Exhibit A" and/or the BCME. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. In addition, the Qualified Biologist shall document field activity via



the Consultant Site Visit Record (CSV). The CSV shall be e-mailed to MMC on the 1<sup>st</sup> day of monitoring, the 1<sup>st</sup> week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

- B. Subsequent Resource Identification** - The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna onsite (e.g., flag plant specimens for avoidance during access, etc). If active nests or other previously unknown sensitive resources are detected, all project activities that directly impact the resource shall be delayed until species specific local, state or federal regulations have been determined and applied by the Qualified Biologist.

### III. Post Construction Measures

- A. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL and MSCP, State CEQA, and other applicable local, state and federal law. The Qualified Biologist shall submit a final BCME/report to the satisfaction of the City ADD/MMC within 30 days of construction completion.

#### 2. SHALLOW BAY - EELGRASS

To mitigate potential direct impacts to eelgrass to a less than significant level the following measures shall be implemented for the proposed project and the project shall implement all of the requirements of the Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project, Mission Bay, San Diego, CA (Merkel & Associates 2016).

- I. Shallow - Bay Eelgrass that is impacted by the proposed project shall be replaced by planting eelgrass at a minimum rate of 1.38 acres for each 1 acre of impact. For the estimated project impact of 42.93 acres, this equates to an initial planting of 59.24 acres of eelgrass.
- II. The minimum overall success rate of eelgrass planting at the end of the monitoring period shall be a ratio of 1.2:1 which equates to 51.51 acres of eelgrass.

#### 3. LEAST TERN

The following measures shall be implemented for the project to protect against detrimental edge effects to least terns:

- I. Dredging should occur from September 15 to March 31 to avoid the least tern nesting season
- II. If in-water construction must occur during the least tern nesting season (April 1 to

September 15), the City should implement the following measures:

- A. Beginning April 1, the City will have a least tern biologist monitor daily for the arrival of least terns into Mission Bay, and immediately notify the Service upon their arrival. The City will coordinate with other least tern monitors in Mission Bay. The City will notify the Service via email on a daily basis as to the presence or absence of least terns in Mission Bay. The least tern biologist will be present throughout the period of in-water construction and will note the presence of least terns in Mission Bay and the work area.
- B. The City will provide a biological monitor with least tern experience on all days when in-water work is conducted after least terns arrive in Mission Bay. The biological monitor will be present throughout the period of in-water construction and will note the presence of least terns in Mission Bay and the work area, and any project-generated surface turbidity. Surface turbidity is defined as an obvious discoloration of the top 10 feet of the water column visible to the human eye. Project-generated surface turbidity shall not exceed 500 feet in length or width, or persist longer than 1 hour.
- C. In the event project-generated surface turbidity exceeds 500 feet in length or width or persists longer than 1 hour, the biological monitor will be empowered to stop project activity to allow the plume to dissipate. The biological monitor will contact the City and Service immediately after construction has been stopped. Construction will not resume until approved by the City and the Service.
- D. The biological monitor will provide daily field reports to the City and Service within 24 hours of each monitoring date. The daily field reports will include photographs showing the best management practices surrounding the work area taken during in-water work, and any incidences of plume escape or expansion outside of the silt curtain. The biological monitor will also submit a final summary report of monitoring to the City and Service within 30 days of completion of in-water work.

## **LAND USE ADJACENCY**

### **1. MSCP SUBAREA PLAN -LAND USE ADJACENCY GUIDELINES (FOR WORK WITHIN 100 FEET OF THE MHPA)**

- I. Prior to issuance of any construction permit or notice to proceed, DSD/ LDR, and/or MSCP staff shall verify the Applicant has accurately represented the project's design in or on the Construction Documents (CD's/CD's consist of Construction Plan Sets for Private Projects and Contract Specifications for Public Projects) are in conformance with the associated discretionary permit conditions and Exhibit "A", and also the City's Multi-Species Conservation Program (MSCP) Multi-Habitat Planning Area (MHPA) Land Use Adjacency**

Guidelines. The applicant shall provide an implementing plan and include references on/in CD's of the following:

- A. **Grading/Land Development/MHPA Boundaries** - MHPA boundaries on-site and adjacent properties shall be delineated on the CDs. DSD Planning and/or MSCP staff shall ensure that all grading is included within the development footprint, specifically manufactured slopes, disturbance, and development within or adjacent to the MHPA. For projects within or adjacent to the MHPA, all manufactured slopes associated with site development shall be included within the development footprint.
- B. **Drainage** - All new and proposed parking lots and developed areas in and adjacent to the MHPA shall be designed so they do not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials prior to release by incorporating the use of filtration devices, planted swales and/or planted detention/desiltation basins, or other approved permanent methods that are designed to minimize negative impacts, such as excessive water and toxins into the ecosystems of the MHPA.
- C. **Toxics/Project Staging Areas/Equipment Storage** - Projects that use chemicals or generate by-products such as pesticides, herbicides, and animal waste, and other substances that are potentially toxic or impactful to native habitats/flora/fauna (including water) shall incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. No trash, oil, parking, or other construction/development-related material/activities shall be allowed outside any approved construction limits. Where applicable, this requirement shall be incorporated into leases on publicly-owned property when applications for renewal occur. Provide a note in/on the CD's that states: *"All construction related activity that may have potential for leakage or intrusion shall be monitored by the Qualified Biologist/Owners Representative or Resident Engineer to ensure there is no impact to the MHPA."*
- D. **Lighting** - Lighting within or adjacent to the MHPA shall be directed away/shielded from the MHPA and be subject to City Outdoor Lighting Regulations per LDC Section 142.0740.
- E. **Barriers** - New development within or adjacent to the MHPA shall be required to provide barriers (e.g., non-invasive vegetation; rocks/boulders; 6-foot high, vinyl-coated chain link or equivalent fences/walls; and/or signage) along the MHPA boundaries to direct public access to appropriate locations, reduce domestic animal predation, protect wildlife in the preserve, and provide adequate noise reduction where needed.
- F. **Invasives** - No invasive non-native plant species shall be introduced into areas within or adjacent to the MHPA.
- G. **Brush Management** - New development adjacent to the MHPA shall be set back from the MHPA to provide required Brush Management Zone 1 area on the building pad outside of the MHPA. Zone 2 may be located within the MHPA provided the Zone 2 management will be the responsibility of an HOA or other private entity except where narrow wildlife corridors require it to be located outside of the MHPA. Brush

management zones will not be greater in size than currently required by the City's regulations, the amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done and vegetation clearing shall be prohibited within native coastal sage scrub and chaparral habitats from March 1-August 15 except where the City ADD/MMC has documented the thinning would be consistent with the City's MSCP Subarea Plan. Existing and approved projects are subject to current requirements of Municipal Code Section 142.0412.

- H. **Noise** - Due to the site's location adjacent to or within the MHPA where the Qualified Biologist has identified potential nesting habitat for listed avian species, construction noise that exceeds the maximum levels allowed shall be avoided during the breeding seasons. If construction is proposed during the breeding season for the species, U.S. Fish and Wildlife Service protocol surveys shall be required in order to determine species presence/absence. If protocol surveys are not conducted in suitable habitat during the breeding season for the aforementioned listed species, presence shall be assumed with implementation of noise attenuation and biological monitoring.

## WATER QUALITY

### 1. Water Quality

- I. The proposed work has the potential to result in short-term increases in localized turbidity in the area of project dredging and material placement for beneficial reuse. In order to minimize the potential for adverse effects of increased turbidity measures shall be taken to control turbidity generation around the dredge to an extent of not more than 500 feet of a visible turbidity plume from the dredge. Because work is needed in areas of high current flow, it is anticipated that the local turbidity plume may elongate rather than spreading radially around the dredge or fill location. Should this occur, the contractor shall be held to a comparable plume area as a radial plume of 500 foot radius, but may measure the plume as an elongated feature using the long and short axis to calculate the area of the plume as an ellipse.
- II. Should water quality limits be exceeded, the contractor shall be required to stop dredging or placing, slow the rate of work, move to a new location to work until a tidal change, or take other corrective actions to get the turbidity levels back in check.
- III. The upland staging area shall be stabilized with appropriate BMPs including a stabilized entrance, silt curtains on the staging area perimeter, and fiber rolls as appropriate to the use. Upon vacating the site the staging area will be stabilized in accordance with the project WPCP.
- IV. The distance from dredging that the plume would be allowed to extend is no more than 500 feet down-current from the dredge.

V. If the plume extends greater than 500 feet then adaptive management measures would need to be taken to control turbidity generation. This may include slowing the dredging or placement rate, altering the excavation bucket or swing speed in hydraulic dredging, or increasing the intake pump speed relative to the cutter head rotation speed. If such measures are not effective at reducing the scale of the plume back to less than 500 feet within an hour, then work would be subject to modified in location or temporary cessation until the conditions improve. It may be necessary for a contractor to only work on some portions of the shoals during neap tides where the tidal flow spread of turbidity is minimized.

VI. Turbidity curtains may be used at the Sail Bay reuse site where placement is through a hydraulic discharge or where bottom dump scows are used to place material over discrete portions of the site. The necessity of the curtain will be determined based on early evaluation of the turbidity generation against the 500 foot plume metric. Because the receiver sites are contained by existing topography, it is expected that subsurface placement will result in minimal turbidity spread. This being said, the Sail Bay receiver sites are far enough removed from tidal influence that these areas may support use of turbidity curtains if required by failure of the visible plume metric.

VII. If turbidity curtains are employed, they shall be of a porous nature, allowing movement of water through the curtain, but retaining fine fraction sediments. This will minimize pressure differential within and outside of the turbidity curtains and potential for curtain ground chain drag.

VIII. Monitoring of the dredging and placement will be completed in order to ensure that water quality action triggers are identified and that actions are taken to resolve exceedances, should they occur. The monitoring program will follow that generally employed for dredging program with more intensive monitoring early in the dredge cycles to assist in identifying problems and assessing adaptive management actions. As the program is developed, monitoring will shift to weekly monitoring. The shift from daily to weekly monitoring will occur after the Contractor has managed to maintain consistent compliance over three consecutive daily monitoring intervals. If the Contractor falls out of compliance during a weekly monitoring interval, then the daily process will commence again until three consecutive monitoring events have been in compliance.

VI. PUBLIC REVIEW DISTRIBUTION:

Draft copies or notice of this Mitigated Negative Declaration were distributed to:

City of San Diego  
Councilmember Zapf - District 2  
Mayor's Office

City Attorney's Office (MS 59)  
Development Services (501)  
Mark Brunette, EAS  
Angela Nazareno, Project Management  
Engineering and Capital Projects (908A)  
George Freiha  
Tamara Miller  
James Arnhart  
Planning Department  
Kristy Forburger  
Facilities Financing, Tom Tomlinson (93B)  
Water Review, Medhi Rastakhiz (86A)  
Library Dept. – Government Documents (81)  
San Diego Central Library (81A)  
Pacific Beach/Taylor Branch Library (81X)

Biological and Jurisdictional Resources

U.S. Army Corps of Engineers (26)  
Regional Water Quality Control Board, Region 9 (44)  
US Fish & Wildlife Service (23)  
California Dept. of Fish & Wildlife (32)  
Sierra Club (165)  
San Diego Audubon Society (167)  
Mr. Jim Peugh (167A)  
California Native Plant Society (170)  
Endangered Habitats League (182A)

Others

Mission Beach Precise Planning Board (325)  
Surfers Tired of Pollution (318)  
Mission Bay Park Committee (318A)  
San Diego Coastkeeper (319)  
Pat Gallagher (322A)  
Mission Bay Lessees (323)  
Citizens Coordinate for Century 3 (324A)  
Beach and Bay Press (372)  
Friends of Rose Canyon (373)  
Pacific Beach Town Council (374)  
Pacific Beach Planning Group (375)  
Crown Point Association (376)  
Pacific Beach Historical Society (377)

VII. RESULTS OF PUBLIC REVIEW:

( ) No comments were received during the public input period.

- ( ) Comments were received but did not address the accuracy or completeness of the draft environmental document. No response is necessary and the letters are incorporated herein.
- (X) Comments addressing the accuracy or completeness of the draft environmental document were received during the public input period. The letters and responses are incorporated herein.

Copies of the draft Mitigated Negative Declaration, the Mitigation, Monitoring and Reporting Program and any Initial Study material are available in the office of the Entitlements Division for review, or for purchase at the cost of reproduction.



Mark Brunette, Senior Planner  
Development Services Department

February 15, 2017  
Date of Draft Report

May 3, 2017  
Date of Final Report

Analyst: Mark Brunette

Attachments: Location Map  
Key Map  
Initial Study Checklist



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services  
 Carlsbad Fish and Wildlife Office  
 2177 Salk Ave, Suite 250  
 Carlsbad, California 92011



In Reply Refer To:  
 FWS-SDG-17B0140-177A0602

March 24, 2017  
 Sent by Email

Mr. Mark Brunette  
 Senior Planner  
 Department of Development Services  
 Environmental Analysis Section  
 1222 First Avenue, MS 501  
 San Diego, California 92101

Subject: Comments on the Draft Mitigated Negative Declaration for the Mission Bay  
 Navigational Safety Dredging Project (Project No. 520687)

Dear Mr. Brunette:

The U.S. Fish and Wildlife Service (Service) has reviewed the above-referenced Draft Mitigated Negative Declaration (DMND) dated February 15, 2017. The public review period for this DMND ended on March 17, 2017. The Service appreciates the time extension until March 24, 2017, granted by the City of San Diego (City) for providing comments to the DMND. The comments and recommendations provided herein are based on information in the DMND, the *Biological Resource Letter Report Mission Bay Navigational Safety Dredging Project* (Merkel 2016a), the *Final Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project Mission Bay, San Diego, California* (Merkel 2016b), our knowledge of the biological resources of the project area, and our participation in implementation of the Multiple Species Conservation Program (MSCP) and the City's MSCP Subarea Plan (SAP).

The primary concern and mandate of the Service is the protection of fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and threatened and endangered animals and plants occurring in the United States. The Service is also responsible for administering the Act, including habitat conservation plans (HCP) developed under section 10(a)(1) of the Act. The City participates in the Service's HCP Program by implementing its SAP.

The project site is located within the City's 4,600-acre Mission Bay Park, San Diego California. Mission Bay is bounded by Interstate 5 to the east, Interstate 8 to the south, and the developed communities of Pacific Beach, Mission Beach, and South Mission Beach to the north and west.

The City proposes to dredge 23 areas totaling 63.36 acres, within an 82.83-acre work area that includes beach, vegetated shallow subtidal habitat (eelgrass beds) and unvegetated shallow

- 1) The summary of the project presented is correct, except that impacts and mitigation are provided as estimates based on the 2013 eelgrass survey results. Under the California Eelgrass Mitigation Policy (CEMP) (NOAA 2014), impacts are to be mitigated based on pre-dredging and post-dredging comparisons and thus the specific impact acreage and requisite mitigation are provided as estimates that will be verified and adjusted at the time of project implementation. A second clarification is also warranted. In order to meet the mitigation requirements under the CEMP, the City must achieve a 1.2:1 ratio of successfully established eelgrass to impacted eelgrass. This totals 51.51 acres if the ultimate impact of 42.93 acres of impact occurs. However, under the CEMP, the initial restoration effort needs to target a goal of 1.38:1 based on southern California regional success rates. As a result, the initial project restoration goal is 1.38:1 with a mitigation success requirement of 1.2:1. The requirement may be met by inclusion of eelgrass already existing within the Mission Bay Mitigation Bank.



Mr. Mark Brunette (FWS-SDG-17B0140-17TA0602)

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subtidal habitat. In addition, the project includes a 1.55-acre staging area of at the South Shores parking lot and two (2.5 acres total) on-water staging areas. The project will dredge approximately 122,000 to 220,850 cubic yards of material which will be used onsite to fill beaches and previously dredged borrow sites totaling 19.47 acres in Mission Bay. Approximately 42.93 acres of eelgrass will be impacted by the project. To mitigate eelgrass impacts, the project will plant 51.51 acres of eelgrass habitat at dredged areas and at filled borrow sites consistent with the California Eelgrass Mitigation Policy and Implementing Guidelines (NOAA 2014), and using 13.01 acres of credits from the Mission Bay Mitigation Bank.

Mission Bay provides nesting and foraging habitat for the federally endangered California least tern (*Sterna amillanum brownii*; least tern). Least terns migrate to nest in California in early April. They search for prey in flight, and forage for small, slender fish such as topsmelt (*Atherinops affinis*) and northern anchovies (*Engraulis mordax*) in shallow waters of bays, estuaries, and the nearshore ocean. Estuaries and seagrass beds are important habitats for prey of least terns and are thus also important to the least tern. Topsmelt spawn in estuaries on aquatic plants, especially eelgrass, and young anchovy move into shallow water such as bays and estuaries found along the coast. Least terns nest on beaches, sand bars, and salt flats, and lay eggs directly on the sand, in shallow nest scrapes that are adorned with shell fragments. Least terns have been displaced from many nesting beaches in southern California, including Pacific Beach and Mission Beach. As part of the *Mission Bay Natural Resources Management Plan* (City 1990), the City maintains five created least tern nest sites. These least tern sites require ongoing management including site preparation (vegetation and substrate management), minimization of human disturbances, monitoring, and predator management.

Our primary concerns with the proposed dredging project pertain to the potential effects to the least tern, particularly the potential of in-water construction impacts during the breeding season, and reduction of shallow foraging habitat for the least tern.

*Biological Resource Letter Report* states that potential impacts to least terns during construction will be avoided by completing dredging and filling activities between October and April outside of the least tern breeding season. However, we have not been able to find where this condition has been included in the DMND. Please revise the DMND to include this measure. In addition, the DMND should include the following conditions to be consistent with Appendix A of the City's SAP which requires the City to implement area specific management directives that protect against detrimental edge effects to least terns:

1. Dredging should occur from September 15 to March 31 to avoid the least tern nesting season
2. If in-water construction must occur during the least tern nesting season (April 1 to September 15), the City should implement the following measures:
  - a. Beginning April 1, the City will have a least tern biologist monitor daily for the arrival of least terns into Mission Bay, and immediately notify the Service upon

- 2) The USFWS reviewed the biological aspects of least terns and their primary prey items of small fish, followed by a summary of tern use in Mission Bay Park. The summary notes that the City under the Mission Bay Natural Resources Management Plan (City 1990) maintains five created least tern nest sites. This is not current information as under the NRMMP, the Crown Point Shores site was required to be maintained for a period of time and if it was not used by terns, it could be modified to an alternative conserved habitat use. This site was repurposed as an intertidal habitat expansion area and became the Crown Point Shores Intertidal Mitigation Site (Stribley Memorial Marsh) in 1997. The remaining least tern sites in the Bay include Stoney Point, North Fiesta Island, FAA Island, and Mariner's Point.
- 3) The USFWS notes a primary concern with the proposed dredging pertaining to the potential effects to least tern, particularly of in-water construction impacts during the breeding season, and reduction of shallow foraging habitat for the least tern and notes an omission of information between the Biological Resources Letter Report and the DMND regarding timing of work. Specifically the Biological Resource Letter Report indicated that dredging and filling activities for the project would occur between October and April, outside of the least tern breeding season. This construction timing restriction was omitted from the DMND.

The timing as outlined in the Biological report is correct and dredging and fill placement work is scheduled to be completed outside of the least tern breeding season, although eelgrass planting will occur into the breeding season. This activity would be of a localized nature and would not generate turbidity or noise disturbance. It would be of a lower activity level than ambient summer uses on Mission Bay. The intent to continue eelgrass restoration into the least tern breeding season was discussed with the USFWS as they prepared this letter and the Service noted that their concern regarding work timing was particularly related to the dredging and filling activities. Corrections will be made to the MND.

The USFWS requested the inclusion of the applicable City Subarea Plan (SAP) specific management directives to protect against detrimental edge effects to least terns. These measures as outlined in the comment letter will be incorporated in the MND as applicable measures under the existing adopted SAP. As these measures have been adopted previously by the City Council, they do not constitute new mitigation, but rather will be implemented as environmental commitments of the project.

Mission Bay Navigational Safety Dredging  
Appendix A - Mitigated Negative Declaration

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Mr. Mark Brunette (FWS-SDG-17B0140-17TA0602)

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their arrival. The City will coordinate with other least tern monitors in Mission Bay. The City will notify the Service via email on a daily basis as to the presence or absence of least terns in Mission Bay. The least tern biologist will be present throughout the period of in-water construction and will note the presence of least terns in Mission Bay and the work area.

- b. The City will provide a biological monitor with least tern experience on all days when in-water work is conducted after least terns arrive in Mission Bay. The biological monitor will be present throughout the period of in-water construction and will note the presence of least terns in Mission Bay and the work area, and any project-generated surface turbidity. Surface turbidity is defined as an obvious discoloration of the top 10 feet of the water column visible to the human eye. Project-generated surface turbidity shall not exceed 500 feet in length or width, or persist longer than 1 hour.
- c. In the event project-generated surface turbidity exceeds 500 feet in length or width or persists longer than 1 hour, the biological monitor will be empowered to stop project activity to allow the plume to dissipate. The biological monitor will contact the City and Service immediately after construction has been stopped. Construction will not resume until approved by the City and the Service.
- d. The biological monitor will provide daily field reports to the City and Service within 24 hours of each monitoring date. The daily field reports will include photographs showing the best management practices surrounding the work area taken during in-water work, and any incidences of plume escape or expansion outside of the silt curtain. The biological monitor will also submit a final summary report of monitoring to the City and Service within 30 days of completion of in-water work.

We have been coordinating with San Diego Audubon on the ReWild Mission Bay Project, which is a state and federally-funded project comprehensively planning for habitat restoration in northeast Mission Bay. The project planning incorporates restoration of 80 acres of wetlands at the outfall of Rose Creek and an upland habitat preserve east of Rose Creek, both of which are consistent with recommendations in the Mission Bay Master Plan Update (City 2002). We urge the City Planning Department to coordinate projects in northeast Mission Bay, including this dredging project and the DeAnza Revitalization Project, with the ReWild Mission Bay Project. The dredging project, particularly in dredging unit 12, should not negatively affect the likelihood of success of either of these habitat restoration efforts. To avoid potential negative effects, we recommend that the project provide additional buffers to potential restoration areas both east (including DeAnza Point and DeAnza Cove) and west (including and south of Campland) of Rose Creek to ensure that wave energy and water flows associated with deeper depths and resulting boat activity do not cause erosion or loss of the habitats to be restored. In addition, the City also should consider alternatives that retain the shoal located at dredging unit 12 while still providing adequate navigational safety for park visitors.

- 4) The project is not proposing to dredge within the planning area for the Rose Creek Marsh or potential DeAnza Point area. While the areas located immediately at the mouth of Rose Creek are shallow, they are also proposed for the alternative marsh complex use under the Master Plan. The dredging within Area 12 is located off the shallowest bench at Rose Creek and well within the high speed navigation area of Fiesta Bay. Area 12 is located between 1200 and 1400 feet away from the Campland shoreline. The colored graphic within the DMND (DMND, page 11) unfortunately illustrated dredge area #12 closer to the mouth of Rose Creek than it is actually proposed. The second map (DMND, page 12) from the Rick Engineering design plans correctly illustrates the location of the dredging. The MND will be corrected to more accurately depict the position of #12. The USFWS also noted that the dredge area should not negatively affect wave energy or water flow that may affect the success of the restoration efforts. While the present depths of the shoal are too shallow to be acceptable for high speed navigation, they are deep enough at present to not affect the short-period wind and wake wave environment in Fiesta Bay. As such, the removal of these shoals would not alter wave environments in the Bay. Further, the shoal does not affect the circulation patterns in Fiesta Bay due to the low velocity of water movement in this area. No additional buffer area is proposed as requested by the commenter because the work is explicit to the location within which hazards are to be removed. Similarly, no alternatives to the removal of the shoal are appropriate due to the nature of the shoaling constraint and the hazards they pose within the high speed area of Fiesta Bay. Because this is a maintenance dredging project, the work would not be to develop a new condition, but rather to restore prior conditions of the Bay suited to the existing water uses designated. It is believed that the concern raised in this comment is substantively resolved by correction of the plotting of the position of the dredge area #12. The correction does not alter the textual discussion as the error was limited to the graphic. Further, because this correction would lessen the concerns expressed by the commenter, the change is not viewed as substantive with respect to the presentation of the project.

Mission Bay Navigational Safety Dredging  
Appendix A - Mitigated Negative Declaration

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Mr. Mark Brunette (FWS-SDG-17B0140-17TA0602)

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We offer additional comments in the Enclosure to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources, and to ensure that the project is consistent with the City's SAP.

If you have questions or comments regarding this letter, please contact Patrick Gower at 760-431-9440, extension 352.

Sincerely,



Digitally signed by  
DAVID ZOLTENOVIK  
Date: 2017.03.24  
15:58:36 -07:00

for Karen A. Goebel  
Assistant Field Supervisor

Enclosure

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Mr. Mark Brunette (FWS-SDG-17B0140-17TA0602)

5

LITERATURE CITED

- [City] City of San Diego. 1990. Mission Bay Natural Resources Management Plan. Prepared for City of San Diego Park and Recreation Department. 68pp.
- [City] City of San Diego. 2002. Mission Bay Park Master Plan Update. Adopted August 2, 1994. Amended July 9, 2002. 369pp
- [Merkel] Merkel and Associates Inc. 2016a. *Biological Resource Letter Report Mission Bay Navigational Safety Dredging Project*. Prepared for the City of San Diego. 46pp
- [Merkel] Merkel and Associates Inc. 2016b. *Final Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project Mission Bay, San Diego, California*. Prepared for the City of San Diego. 91pp
- [NOAA] National Oceanographic and Atmospheric Administration. 2014. California Eelgrass Mitigation Policy and Implementing Guidelines. 47pp

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Enclosure

Comments and Recommendations on the  
Draft Mitigated Negative Declaration for the for the  
Mission Bay Navigational Safety Dredging Project

*Draft Mitigated Negative Declaration (DMND)*

1. Page 1 Project Description: The total acres provided in the project description do not match the total acres provided in Table 5 of the *Biological Resource Letter Report Mission Bay Navigational Safety Dredging Project*. The DMND states that the project will dredge the bay to the original survey elevations and utilize the dredged material to fill borrow sites in accordance with the Mission Bay Baseline Chart. The DMND and the Eelgrass Mitigation and Monitoring plan should include information on the original survey elevations in the Mission Bay Baseline chart and the project's consistency with these elevations.
2. Section 4: Water Quality 1: The DMND should specify what measures will be implemented to reduce or control turbidity.
3. Page 9 Initial Study: The MND should include distances between the proposed dredging and sensitive resources, including least tern nest sites.
4. The DMND should include information on the effects climate change and associated sea level rise will have on eelgrass in Mission Bay.
5. The DMND should prioritize FAA Island as a beneficial re-use site for suitable sandy substrate obtained during dredging operations. This measure would benefit least terns that nest in Mission Bay.
6. The DMND should provide a clearly labeled map and associated table that depict and quantify the acreage of each dredging, fill, and staging area.
7. The DMND should require that pre-project eelgrass surveys of the borrow sites that are proposed to be filled and planted to mitigate eelgrass impacts from dredging. Additional mitigation and/or alternative sites may be needed if these areas support eelgrass.
8. The DMND should require updated eelgrass surveys of the Eelgrass Mitigation Bank prior to any agreement to use bank credits.

*Final Eelgrass Mitigation and Monitoring Plan:*

9. Final approval of the Eelgrass Mitigation and Monitoring Plan should be coordinated with the Service, City, National Marine Fisheries Service and the California Department of Fish and Wildlife.
10. Page 5 and page 7: The Final Eelgrass Mitigation and Monitoring Plan should state that after the pre-dredging surveys are completed, the Service, National Marine Fisheries

- 5) The total acreage as presented on Page 1 in the project description is in error and the acreage on Table 5 of the Biological Resources Report are correct. The DMND presents a total acreage based on the erroneous addition of dredge and reuse areas as presented in the tables on the graphics of (DMND Page 12). However, there is a 7.1 acre overlap between dredge and beneficial reuse areas that are associated with the beach sand recapture and fill sites. As a result the in-marine habitat impact area is 75.73 acres. This will be corrected and clarified in the MND.

The Mission Bay Baseline Chart is the condition of Mission Bay at the time of construction and reflects a bottom elevation in the Bay that ranges from deeper areas west of West Mission Bay Drive such as the federal navigation channel, Mariner's Basin, and Quivira Basin (not part of the proposed work area) to bay floor elevations that were dredged to -8 feet MLLW within the inner recreational areas of the Bay. The proposed dredging would be to return elevations to the Baseline Chart elevations. The proposed project provides for a dredge floor of -8 feet MLLW (-10.5 feet NGVD) with a standard allowable overdredge of +2 feet to ensure that the minimum clearances are met.

- 6f) Additional information will be provided in the MND. The dredging activities are generally located in areas subject to substantial tidal current in areas that support extensive eelgrass. In such environments, curtain drag on the bottom can result in eelgrass damage and pile or anchor supports required to retain curtains can be extensive, difficult to construct and very damaging to eelgrass that occurs outside of the dredge footprint where the curtain would need to be placed. Further, the stress on the curtain from flowing water pressures generally results in high incidents of turbidity curtain failures through ripping of the fabric, splitting seams, or lifting of the bottom. For these reasons, erection of turbidity curtains is not viewed as a practical turbidity control measure for the current work due to project scale and dredging locations. Instead, the turbidity controls measured to be applied are performance based measures. Specifically, this will be accomplished by using a limitation on the distance from the operations of the visible turbidity plume. Measures to be employed are as follows:
  - a) The distance from dredging that the plume would be allowed to extend is no more than 500 feet down-current from the dredge.
  - b) If the plume extends greater than 500 feet then adaptive management measures would need to be taken to control turbidity generation. This may include slowing the dredging or placement rate, altering the excavation bucket or swing speed in hydraulic dredging, or increasing the intake pump speed relative to the cutter head rotation speed. If such measures are not effective at reducing the scale of the plume back to less than 500 feet within an hour, then work would be subject to modified in location or temporary cessation until the conditions improve. It may be necessary for a contractor to only work on some portions of the shoals during neap tides where the tidal flow spread of turbidity is minimized.

Enclosure

Comments and Recommendations on the  
Draft Mitigated Negative Declaration for the for the  
Mission Bay Navigational Safety Dredging Project

*Draft Mitigated Negative Declaration (DMND)*

1. Page 1 Project Description: The total acres provided in the project description do not match the total acres provided in Table 5 of the *Biological Resource Letter Report Mission Bay Navigational Safety Dredging Project*. The DMND states that the project will dredge the bay to the original survey elevations and utilize the dredged material to fill borrow sites in accordance with the Mission Bay Baseline Chart. The DMND and the Eelgrass Mitigation and Monitoring plan should include information on the original survey elevations in the Mission Bay Baseline chart and the project's consistency with these elevations.
2. Section 4: Water Quality 1: The DMND should specify what measures will be implemented to reduce or control turbidity.
3. Page 9 Initial Study: The MND should include distances between the proposed dredging and sensitive resources, including least tern nest sites.
4. The DMND should include information on the effects climate change and associated sea level rise will have on eelgrass in Mission Bay.
5. The DMND should prioritize FAA Island as a beneficial re-use site for suitable sandy substrate obtained during dredging operations. This measure would benefit least terns that nest in Mission Bay.
6. The DMND should provide a clearly labeled map and associated table that depict and quantify the acreage of each dredging, fill, and staging area.
7. The DMND should require that pre-project eelgrass surveys of the borrow sites that are proposed to be filled and planted to mitigate eelgrass impacts from dredging. Additional mitigation and/or alternative sites may be needed if these areas support eelgrass.
8. The DMND should require updated eelgrass surveys of the Eelgrass Mitigation Bank prior to any agreement to use bank credits.

*Final Eelgrass Mitigation and Monitoring Plan:*

9. Final approval of the Eelgrass Mitigation and Monitoring Plan should be coordinated with the Service, City, National Marine Fisheries Service and the California Department of Fish and Wildlife.
10. Page 5 and page 7: The Final Eelgrass Mitigation and Monitoring Plan should state that after the pre-dredging surveys are completed, the Service, National Marine Fisheries

- c) Turbidity curtains may be used at the Sail Bay reuse site where placement is through a hydraulic discharge or where bottom dump scows are used to place material over discrete portions of the site. The necessity of the curtain will be determined based on early evaluation of the turbidity generation against the 500 foot plume metric. Because the receiver sites are contained by existing topography, it is expected that subsurface placement will result in minimal turbidity spread. This being said, the Sail Bay receiver sites are far enough removed from tidal influence that these areas may support use of turbidity curtains if required by failure of the visible plume metric.
- d) If turbidity curtains are employed, they shall be of a porous nature, allowing movement of water through the curtain, but retaining fine fraction sediments. This will minimize pressure differential within and outside of the turbidity curtains and potential for curtain ground chain drag.
- e) Monitoring of the dredging and placement will be completed in order to ensure that water quality action triggers are identified and that actions are taken to resolve exceedances, should they occur. The monitoring program will follow that generally employed for dredging program with more intensive monitoring early in the dredge cycles to assist in identifying problems and assessing adaptive management actions. As the program is developed, monitoring will shift to weekly monitoring. The shift from daily to weekly monitoring will occur after the Contractor has managed to maintain consistent compliance over three consecutive daily monitoring intervals. If the Contractor falls out of compliance during a weekly monitoring interval, then the daily process will commence again until three consecutive monitoring events have been in compliance.
- 7) Distances will be put onto the graphic on (MND page 12), however, there is no plan for dredging during the least tern season as indicated in Response #3, above.
- 8) The ultimate effects of climate change and associated sea level rise is not certain and dependent upon a number of factors. Present predictions are for a middle range of sea level rise on the order of 37 inches by 2100 (see below). This sea level rise estimate is nested in a high degree of overall uncertainty in the ultimate and interim predictions of sea level rise conditions within the 2100 planning horizon.

Predicted Sea Level Rise Ranges	2030	2050	2100
High	16 in (1.3 ft)	24 in (2 ft)	66 in (5.5 ft)
Mid	6 in (0.5 ft)	11 in (0.9 ft)	37 in (3.1 ft)
Low	2 in	5 in	17 in (1.4 ft)

Enclosure

Comments and Recommendations on the Draft Mitigated Negative Declaration for the Mission Bay Navigational Safety Dredging Project

Draft Mitigated Negative Declaration (DMND)

1. Page 1 Project Description: The total acres provided in the project description do not match the total acres provided in Table 5 of the *Biological Resource Letter Report Mission Bay Navigational Safety Dredging Project*. The DMND states that the project will dredge the bay to the original survey elevations and utilize the dredged material to fill borrow sites in accordance with the Mission Bay Baseline Chart. The DMND and the Eelgrass Mitigation and Monitoring plan should include information on the original survey elevations in the Mission Bay Baseline chart and the project's consistency with these elevations.
2. Section 4: Water Quality I: The DMND should specify what measures will be implemented to reduce or control turbidity.
3. Page 9 Initial Study: The MND should include distances between the proposed dredging and sensitive resources, including least tern nest sites.
4. The DMND should include information on the effects climate change and associated sea level rise will have on eelgrass in Mission Bay.
5. The DMND should prioritize FAA Island as a beneficial re-use site for suitable sandy substrate obtained during dredging operations. This measure would benefit least terns that nest in Mission Bay.
6. The DMND should provide a clearly labeled map and associated table that depict and quantify the acreage of each dredging, fill, and staging area.
7. The DMND should require that pre-project eelgrass surveys of the borrow sites that are proposed to be filled and planted to mitigate eelgrass impacts from dredging. Additional mitigation and/or alternative sites may be needed if these areas support eelgrass.
8. The DMND should require updated eelgrass surveys of the Eelgrass Mitigation Bank prior to any agreement to use bank credits.

Final Eelgrass Mitigation and Monitoring Plan:

9. Final approval of the Eelgrass Mitigation and Monitoring Plan should be coordinated with the Service, City, National Marine Fisheries Service, and the California Department of Fish and Wildlife.
10. Page 5 and page 7: The Final Eelgrass Mitigation and Monitoring Plan should state that after the pre-dredging surveys are completed, the Service, National Marine Fisheries

Eelgrass distribution in Mission Bay is strongly driven by water depth associated constraints of desiccation stress on the upper margin of the beds and light limitation at the lower margins of the bed. As a result, in a simple sense, increase in sea level would result in a shoreward migration of eelgrass and a loss of eelgrass at depth. For low estimates of sea level rise, it is expected that in Mission Bay Park, little overall change in distribution pattern would be seen during some years and dramatic reduction in eelgrass within the eastern basin would occur during other years. The principal drivers of eelgrass losses under these situations would be expected to be watershed influx of sediment and nutrients that would drive a response of increased turbidity and phytoplankton in the water column during the subsequent growing season. At moderate to high predicted sea level rise conditions, eelgrass would likely decline through most of the eastern basins of the bay and become less predictable in coverage across the floor of the western basin.

The mid and high sea level rise scenarios would be expected to result in flooding of significant portions of Mission Beach and would thus be expected to be accompanied by infrastructure changes that would affect Mission Bay, however, what this change would be is speculative at the present time. Relative to navigational dredging within the Bay, climate change predictions are expected to exacerbate the intensity and frequency of storms that may result in increased shoal development, while sea level rise would tend to mitigate the urgency for future dredging since the deeper waters would reduce the navigation hazard nature of the shoals. It is not clear whether sea level rise, or increased intensity and frequency of storms will have the greatest influence on future needs for maintenance dredging as they result in counter effects.

- 9) The beneficial reuse plans for the dredged material that is contemplated in the project is required to meet project goals to have a self-mitigating project that creates sites suitable to support eelgrass habitat that will be damaged due to the dredging. We understand the desires of the USFWS to augment sand on the FAA Island which presently is suffering erosion due to failed revetment containment on portions of the island. However, repair of the island would be a different project and would require a surplus of dredged material that is not available from the present work. It is suggested that this work be considered for inclusion in the up-coming City Programmatic EIR for Mission Bay Park as it fits better with the intent of the larger work effort being considered.
- 10) The DMND provides an overview plan for the dredging that outlines the sites to be dredged and filled along with tables that identify the volume and footprints of dredging and filling (DMND, Page 12). In addition the map includes an inset detail map of the contractor staging area.
- 11) The proposed project is to be mitigated under the CEMP. The CEMP requires pre-construction and post-construction surveys to determine eelgrass impacts (See Response 1 above). The project is required to meet the 1.2:1 mitigation ratio and any eelgrass present at the time of the construction that is damaged by the work (in the dredge areas or fill areas) would need to be mitigated in accordance with the CEMP requirements.

Enclosure

Comments and Recommendations on the  
Draft Mitigated Negative Declaration for the for the  
Mission Bay Navigational Safety Dredging Project

Draft Mitigated Negative Declaration (DMND)

1. Page 1 Project Description: The total acres provided in the project description do not match the total acres provided in Table 5 of the *Biological Resource Letter Report Mission Bay Navigational Safety Dredging Project*. The DMND states that the project will dredge the bay to the original survey elevations and utilize the dredged material to fill borrow sites in accordance with the Mission Bay Baseline Chart. The DMND and the Eelgrass Mitigation and Monitoring plan should include information on the original survey elevations in the Mission Bay Baseline chart and the project's consistency with these elevations.
2. Section 4: Water Quality 1: The DMND should specify what measures will be implemented to reduce or control turbidity.
3. Page 9 Initial Study: The MND should include distances between the proposed dredging and sensitive resources, including least tern nest sites.
4. The DMND should include information on the effects climate change and associated sea level rise will have on eelgrass in Mission Bay.
5. The DMND should prioritize FAA Island as a beneficial re-use site for suitable sandy substrate obtained during dredging operations. This measure would benefit least terns that nest in Mission Bay.
6. The DMND should provide a clearly labeled map and associated table that depict and quantify the acreage of each dredging, fill, and staging area.
7. The DMND should require that pre-project eelgrass surveys of the borrow sites that are proposed to be filled and planted to mitigate eelgrass impacts from dredging. Additional mitigation and/or alternative sites may be needed if these areas support eelgrass.
8. The DMND should require updated eelgrass surveys of the Eelgrass Mitigation Bank prior to any agreement to use bank credits.

Final Eelgrass Mitigation and Monitoring Plan:

9. Final approval of the Eelgrass Mitigation and Monitoring Plan should be coordinated with the Service, City, National Marine Fisheries Service and the California Department of Fish and Wildlife.
10. Page 5 and page 7: The Final Eelgrass Mitigation and Monitoring Plan should state that after the pre-dredging surveys are completed, the Service, National Marine Fisheries

12) An update of the mitigation bank acreage is required prior to any transactions for the mitigation bank as an element of the bank MOA requirements. This is also outlined in the project eelgrass mitigation plan. The Bank calls for all transactions to be supported by an updated ledger to account for what is already used and what remains available. This will be clarified in the MND as follows:

*In order to apply this mitigation to the project, a post-dredging survey of the existing mitigation sites under the MOA will be completed and the mitigation ledgers will be updated and submitted as a part of the post-dredging eelgrass survey. These ledgers will provide a calculated offset of the total mitigation needed for the project. The residual eelgrass mitigation will be derived from restoration of the dredge areas and subtidal reuse areas to be restored to eelgrass under this mitigation plan.*

13) The final eelgrass mitigation and monitoring plan will be required to address impacts identified under CEQA as well as mitigation requirements identified through other state and federal regulatory programs. These include issuance of a Rivers & Harbors Act, section 10 permit and Clean Water Act section 404 permit, a CWA section 401 state water quality certification, and a Coastal Development Permit. These permits and approvals include interaction with the state and federal resource agencies, including coordination on the final eelgrass mitigation and monitoring plan. Because the mitigation plan proposed is consistent with the California Eelgrass Mitigation Policy that has been adopted as standard by the agencies, it is expected that the mitigation derived from this coordination will add detail to the mitigation, but not necessarily a change in minimum mitigation standards.

14) The final eelgrass mitigation would be determined through a comparison between the pre-dredging and post-dredging and placement surveys as specified under the CEMP. The pre-dredging survey results will be shared with the state and federal agencies including the Corps of Engineers, National Marine Fisheries Service, U.S. Fish & Wildlife Service, California Department of Fish & Wildlife, California Coastal Commission, and Regional Water Quality Control Board, in addition to the City DSD. However, the intended function of the pre- and post-dredging comparison is to ensure that any unanticipated impacts of the project are identified and that these are included in the mitigation calculation. As such, the pre-dredging survey only provides an estimator of impact and the post-dredging survey and analysis would provide the final impact assessment. This will be provided to the agencies to support the mitigation determinations. It is anticipated that the mitigation will apply mitigation ratios under the CEMP as these are known today.



Mr. Mark Brunette (FWS-SDG-17B0140-17TA0602)

Enclosure Page 2

Service and the California Department of Fish and Wildlife will be consulted to determine the extent of eelgrass impacts to and mitigation required to address project impacts.

11. Page 8 Existing Eelgrass Mitigation Lands: The Final Eelgrass Mitigation and Monitoring Plan should include information on the conservation status of the proposed mitigation banks and what management is occurring that ensures the quality of habitat within the banks and documentation showing that 13.01 acres of eelgrass has been recently verified within the banks.

- 15) The final mitigation and monitoring plan will be updated with information on the status of the mitigation banks inclusive of eelgrass acreage verification, and conservation. The banks do not require ongoing management as they are self-sustaining and are not subject to the same types of threats that terrestrial and wetland banks experience. The banks are not exclusive use areas and thus allow boating, fishing, and compatible recreation with the conservation purposes. Additional information will be added to the final mitigation plan ultimately adopted after completion of the state and federal regulatory processes.



STATE OF CALIFORNIA  
 GOVERNOR'S OFFICE of PLANNING AND RESEARCH  
 STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX  
 DIRECTOR

EDMUND G. BROWN JR.  
 GOVERNOR

March 17, 2017

Mark Brunette  
 City of San Diego  
 1222 First Avenue, MS-501  
 San Diego, CA 92101

Subject: Mission Bay Park Navigational Safety Dredging (PTS No. 520687)  
 SCBH#: 2017021052

Dear Mark Brunette:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on March 16, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0615 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan  
 Director, State Clearinghouse

Enclosures  
 cc: Resources Agency

1400 Joth Street P.O. Box 3044 Sacramento, California 95812-3044  
 (916) 445-0613 FAX (916) 323-3018 www.oprc.ca.gov

Comment acknowledged. Responses to commenting agency letters are as follows.

Mission Bay Navigational Safety Dredging  
 Appendix A - Mitigated Negative Declaration

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2017021052  
**Project Title** Mission Bay Park Navigational Safety Dredging (PTS No. 520687)  
**Lead Agency** San Diego, City of

**Type** MND Mitigated Negative Declaration  
**Description:** A site development permit The Mission Bay Park is the largest aquatic park of its kind in the country. It consists of over 4,600 acres in roughly equal parts land and water with 27 miles of shoreline. Over the years, recreational boating, storms and water currents have impacted the bottom of Mission Bay causing sediment travel and creation of shoals - built up of areas with sand and displacement in other areas. In order to maintain the navigational water safety in the bay, the intent of the project is to dredge the bottom of the bay to the original survey elevation and utilize the dredged material to fill the depleted/reuse areas within the bay in accordance with the Mission Bay Baseline Chart.

**Lead Agency Contact**

**Name:** Mark Brunette  
**Agency:** City of San Diego  
**Phone:** (619) 446-5379 **Fax:**  
**email:**  
**Address:** 1222 First Avenue, MS-501  
**City:** San Diego **State:** CA **Zip:** 92101

**Project Location**

**County:** San Diego  
**City:**  
**Region:**  
**Lat / Long:** 32° 45' 30" N / 117° 14' 07" W  
**Cross Streets:** Ingraham St & Vacation Rd  
**Parcel No.:** 435-480-17-00  
**Township:** **Range:** **Section:** **Base:**

**Proximity to:**

**Highways:** 8, 5  
**Airports:**  
**Railways:** MTS  
**Waterways:** San Diego River  
**Schools:** Mission Bay HS  
**Land Use:** park, open space and recreation by GP; No zoning des

**Project Issues:** Biological Resources; Water Quality; Wetland/Riparian; Landuse

**Reviewing Agencies:** Resources Agency; Department of Boating and Waterways; California Coastal Commission; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Office of Emergency Services, California; California Highway Patrol; Caltrans, District 11; Regional Water Quality Control Board, Region 9; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; San Diego River Conservancy

**Date Received:** 02/15/2017 **Start of Review:** 02/15/2017 **End of Review:** 03/16/2017

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Note: Blanks in data fields result from insufficient information provided by lead agency.

STATE OF CALIFORNIA  
NATIVE AMERICAN HERITAGE COMMISSION  
1550 Harbor Blvd., Suite 100  
West Sacramento, CA 95691  
Phone (916) 373-3710  
Fax (916) 373-5474  
Email: [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
Website: <http://www.nahc.ca.gov>  
Twitter: @CA\_NAHC

Edmund G. Brown Jr., Governor



Governor's Office of Planning & Research

NEW  
3/16/17

MAIL 03 2017  
STATE CLEARINGHOUSE

February 28, 2017

Mark Brunette  
City of San Diego  
1222 1st Avenue  
San Diego, CA 92101

Re: SCH# 2017021052 Mission Bay Park Navigational Safety Dredging (PYS No. 5200687), San Diego County.

Dear Mr. Brunette:

The Native American Heritage Commission (NAHC) has reviewed the Mitigated Negative Declaration (MND) prepared for the project referenced above.

The California Environmental Quality Act (CEQA), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.<sup>1</sup> If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.<sup>2</sup> In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52.<sup>3</sup> AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015. AB 52 created a separate category for "tribal cultural resources", that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."<sup>4</sup> Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resources.<sup>5</sup> Your project may also be subject to Senate Bill 18 (SB 18) (Burton, Chapter 905, Statutes of 2004), Government Code 65952.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. Both SB 18 and AB 52 have tribal consultation requirements. Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 105 of the National Historic Preservation Act of 1956<sup>6</sup> may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>. Additional information regarding AB 52 can be found online at [http://nahc.ca.gov/wp-content/uploads/2015/00/AB52TribalConsultation\\_CalEPA.pdf](http://nahc.ca.gov/wp-content/uploads/2015/00/AB52TribalConsultation_CalEPA.pdf), entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at [katy.sanchez@nahc.ca.gov](mailto:katy.sanchez@nahc.ca.gov) or call (916) 373-3712, if you have any questions.

Sincerely,

*Katy Sanchez*  
Katy Sanchez  
Associate Environmental Planner

Attachment  
cc: State Clearinghouse

<sup>1</sup> Pub. Resources Code § 21002 et seq.  
<sup>2</sup> Pub. Resources Code § 21084.1; Cal. Code Regs., tit. 14, § 15004.5 (b); CEQA Guidelines Section 15094.5 (b)  
<sup>3</sup> Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15004 subd. (a)(1); CEQA Guidelines § 15094 (a)(1)  
<sup>4</sup> Government Code 65952.3  
<sup>5</sup> Pub. Resources Code § 21074  
<sup>6</sup> Pub. Resources Code § 21084.2  
<sup>7</sup> Pub. Resources Code § 21089.2 (a)  
<sup>8</sup> 164 U.S.C. 306101, 36 C.F.R. § 900 et seq.

California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project have not requested consultation pursuant to AB 52 for the Area of Project Effect.

Pertinent Statutory Information:

Under AB 52:

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice. A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).<sup>10</sup>

The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- a. Alternatives to the project.
- b. Recommended mitigation measures.
- c. Significant effects.

1. The following topics are discretionary topics of consultation:

- a. Type of environmental review necessary.
- b. Significance of the tribal cultural resources.
- c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency.

With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (f) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
- b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.

Consultation with a tribe shall be considered concluded when either of the following occurs:

- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
- b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.<sup>11</sup>

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.

If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b).

An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
- b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
- c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.<sup>12</sup>

*This process should be documented in the Tribal Cultural Resources section of your environmental document.*

Under SB 18:

Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5091.993 of the Public Resources Code.

<sup>10</sup> Pub. Resources Code § 21080.3.1, subd. (d) and (e)

<sup>11</sup> Pub. Resources Code § 21080.3.1 (b)

<sup>12</sup> Pub. Resources Code § 21080.3.2 (a)

<sup>13</sup> Pub. Resources Code § 21080.3.2 (a)

<sup>14</sup> Pub. Resources Code § 21082.3 (d)(1)

<sup>15</sup> Pub. Resources Code § 21082.3 (h)

<sup>16</sup> Pub. Resources Code § 21080.3.2 (b)

<sup>17</sup> Pub. Resources Code § 21082.3 (a)

<sup>18</sup> Pub. Resources Code § 21082.3 (c)

<sup>19</sup> Pub. Resources Code § 21082.3 (d)

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- SB 18 applies to local governments and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_S22.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_S22.pdf)
- **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.<sup>19</sup>
- **There is no Statutory Time Limit on Tribal Consultation under the law.**
- **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research,<sup>20</sup> the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.
- **Conclusion Tribal Consultation:** Consultation should be concluded at the point in which:
  - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.<sup>21</sup>

**NAHC Recommendations for Cultural Resources Assessments:**

- Contact the NAHC for:
  - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
    - The request form can be found at <http://nahc.ca.gov/resource/forms/>.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://chp.parks.ca.gov/?page\\_id=1058](http://chp.parks.ca.gov/?page_id=1058)) for an archaeological records search. The records search will determine:
  - If part or the entire APE has been previously surveyed for cultural resources.
  - If any known cultural resources have been already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

**Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.<sup>22</sup>

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

<sup>19</sup> (Gov. Code § 65452.1 (a)(2)).

<sup>20</sup> Pursuant to Gov. Code section 65040.2.

<sup>21</sup> (Gov. Code § 65362.3 (j)).

<sup>22</sup> Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 10).

<sup>23</sup> (Gov. Code § 615.3 (a)).

<sup>24</sup> (Pub. Resources Code § 5097.991).

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- o Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.<sup>27</sup> In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- o Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- o Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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<sup>27</sup> See Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

PL

DEPARTMENT OF TRANSPORTATION  
DISTRICT 11  
4050 TAYLOR STREET, M.S. 120  
SAN DIEGO, CA 92116  
PHONE (619) 688-6668  
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STATE CLEARINGHOUSE

February 22, 2017

11-SD-5, 8  
PM VAR

Mission Bay Park Navigational Safety Dredging (PTS No. 520687)  
DMND / SCH#2017021052

Mr. Mark Brunette  
City of San Diego Development Services Center  
1222 1<sup>st</sup> Avenue (MS 501)  
San Diego, CA 92101

Dear Mr. Brunette:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Draft Mitigated Negative Declaration (MND) for the proposed Mission Bay Park Navigational Safety Dredging Project located near I-5 and I-8. The mission of Caltrans is to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Please provide Caltrans District 11 Planning Division with a copy of the Transportation Control Plan when available. Caltrans has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits Issuance Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway System.

Any work performed within Caltrans right-of-way (R/W) will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction. As part of the encroachment permit process, the applicant must provide an approved final environmental document including the California Environmental Quality Act (CEQA) determination addressing any environmental impacts within the Caltrans's R/W, and any corresponding technical studies.

"Caltrans improves mobility across California"

The project will not occur within Caltrans right-of-way so no discretionary review or encroachment permit would be required. No oversize/overweight vehicles will be used for the proposed project so no special transportation permits would be required to be issued by Caltrans.

Mission Bay Navigational Safety Dredging  
Appendix A - Mitigated Negative Declaration



Mr. Brunette  
February 22, 2017  
Page 2

If you have any questions, please contact Kimberly Dodson, of the Caltrans Development Review Branch, at (619) 688-2510 or by e-mail sent to [kimberly.dodson@dot.ca.gov](mailto:kimberly.dodson@dot.ca.gov).

Sincerely,

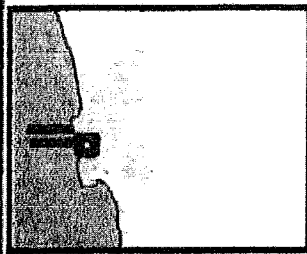


JACOB ARMSTRONG, Chief  
Development Review Branch






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The City of  
**SAN DIEGO** Public Works

*Mission Bay Dredging*



**Legend**

-  Dredging Area with the Largest Eel Grass Impact
-  Dredge Area
-  Drain Pipe
-  Rock Protection Required
-  Reuse Area



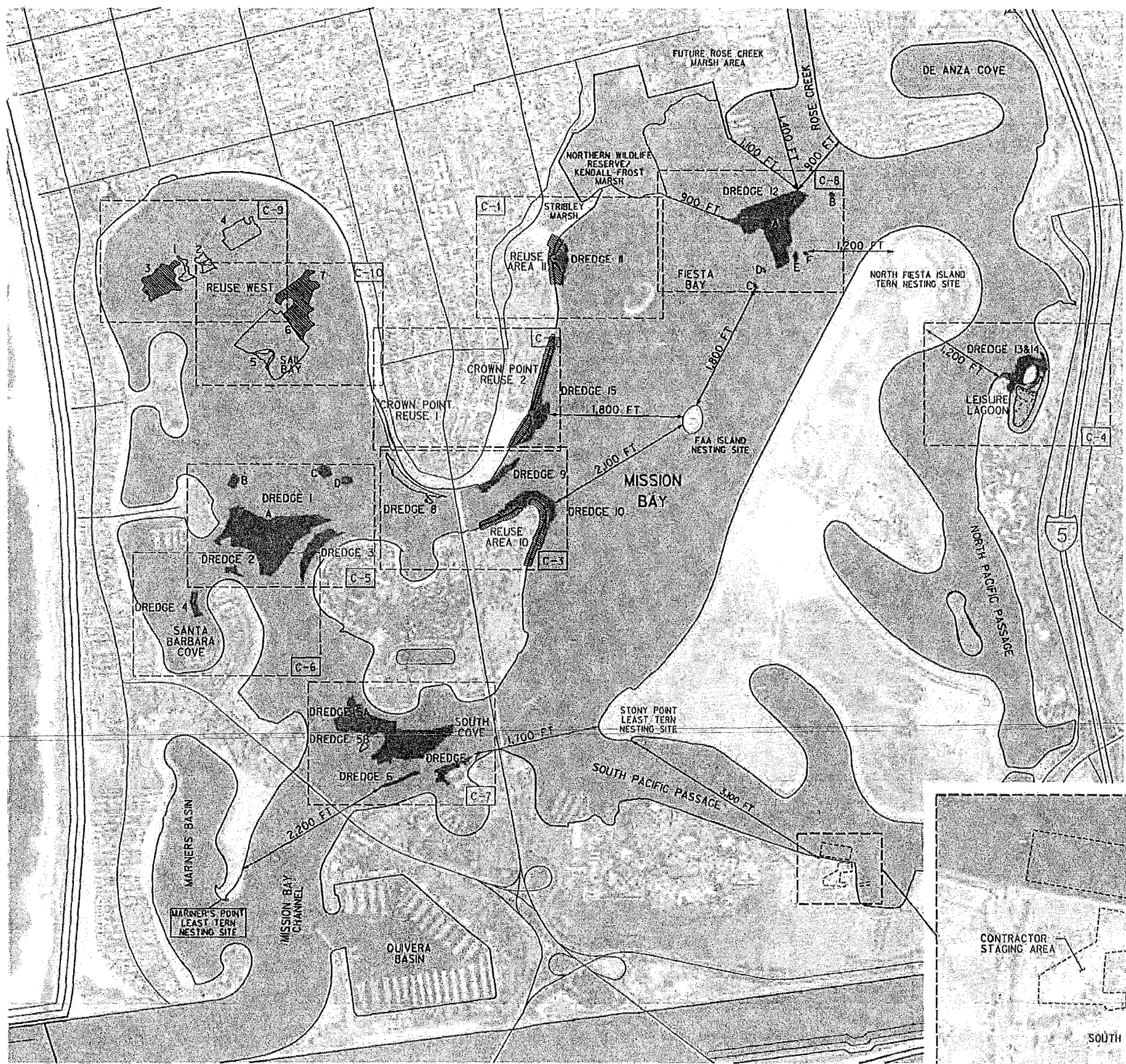
COMMUNITY NAME: MISSION BAY

COUNCIL DISTRICT: 2

Date: July 2016



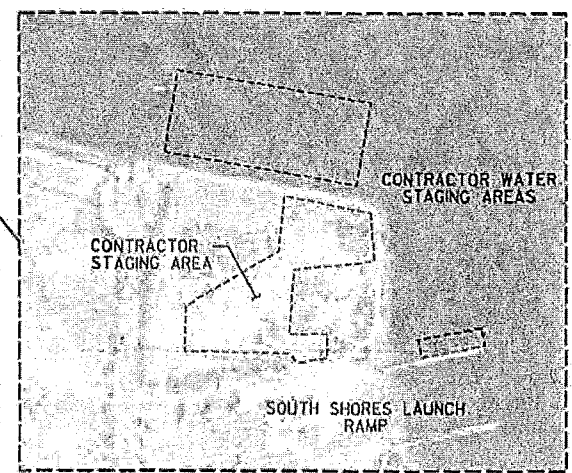
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SITE	AREA (ACRES)	DREDGE ELEV (FT)	CUT VOLUME (CY)	FILL VOLUME (CY)	1-FT NON-PAID ALLOWABLE OVERDREDGE (CY)	2-FT PAID ALLOWABLE OVERDREDGE (CY)	EELGRASS IMPACT (ACRES)	EELGRASS TRANSPLANT AREA (ACRES)-NIC	PREDICTED EELGRASS RESTORED (ACRES)-NIC
<b>DREDGE SITES</b>									
DREDGE 1A	15.87	-10.50	22,690	-	25,600	-	15.87	15.87	15.08
DREDGE 1B	0.52	-10.50	590	-	840	-	0.52	0.52	0.49
DREDGE 1C	0.63	-10.50	720	-	1,020	-	0.63	0.63	0.60
DREDGE 1D	0.41	-10.50	500	-	660	-	0.41	0.41	0.39
DREDGE 2	0.41	-10.50	470	-	660	-	0.41	0.41	0.39
DREDGE 3	2.84	-10.50	5,450	-	4,580	-	2.57	2.84	2.70
DREDGE 4	0.80	-10.50	610	-	1,250	-	0.64	0.80	0.76
DREDGE 5A	13.50	-10.50	19,850	-	21,780	-	13.30	13.50	12.83
DREDGE 5B	NO WORK	-10.50	NO WORK	-	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK
DREDGE 6	0.67	-10.50	850	-	1,080	-	0.42	0.67	0.64
DREDGE 7	1.30	-10.50	3,380	-	2,100	-	1.30	1.30	1.24
DREDGE 8	NO WORK	-10.50	NO WORK	-	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK
DREDGE 9	1.94	-10.00	4,770	-	-	-	0.97	1.94	1.01
DREDGE 10	3.61	-10 TO -11	15,300	8,780	-	-	2.01	3.61	1.88
DREDGE 11	1.67	-7.00	5,900	5,900	-	-	0.64	1.67	0.87
DREDGE 12A	11.44	-10.50	22,890	-	-	36,930	0.99	-	-
DREDGE 12B	0.13	-10.50	230	-	-	410	-	-	-
DREDGE 12C	0.11	-10.50	190	-	-	350	0.06	-	-
DREDGE 12D	0.07	-10.50	120	-	-	210	0.04	-	-
DREDGE 12E	0.21	-10.50	380	-	-	680	0.04	-	-
DREDGE 12F	0.08	-10.50	140	-	-	260	0.00	-	-
DREDGE 13 & 14	3.78	-5.00	8,320	8,320	-	-	0.78	3.78	2.68
DREDGE 15	3.37	-2 TO -7	9,050	9,050	-	-	1.31	3.37	2.36
<b>TOTAL DREDGE</b>	<b>63.36</b>		<b>122,400</b>	<b>32,050</b>	<b>59,610</b>	<b>38,840</b>	<b>42.93</b>	<b>51.32</b>	<b>43.90</b>

BENEFICIAL RESUE EELGRASS MITIGATION SITE	AREA (ACRES)	FILL VOL (CY)	EELGRASS TRANSPLANT AREA (ACRES)-NIC	PREDICTED EELGRASS RESTORED (ACRES) - NIC
<b>RESUE SITES</b>				
RESUE WEST 1	NO WORK	NO WORK	NO WORK	NO WORK
RESUE WEST 2	NO WORK	NO WORK	NO WORK	NO WORK
RESUE WEST 3 **	5.59	64,940	2.51	2.38
RESUE WEST 4	NO WORK	NO WORK	NO WORK	NO WORK
RESUE WEST 5	NO WORK	NO WORK	NO WORK	NO WORK
RESUE WEST 6 **	0.89	8,930	2.23	2.12
RESUE WEST 7 **	8.66	114,930	2.50	2.37
CROWN POINT REUSE 1	NO WORK	NO WORK	NO WORK	NO WORK
CROWN POINT REUSE 2	3.35	9,050	-	-
REUSE AREA 10	3.75	8,780	-	-
LEISURE LAGOON	2.45	8,320	2.45	1.74
REUSE AREA 11	2.06	5,900	-	-
<b>TOTAL REUSE</b>	<b>26.75</b>	<b>220,850</b>	<b>9.69</b>	<b>8.61</b>

\*\*FILL VOLUME IN CLUDES DREDGING CUT VOLUME AND 1-FT AND 2-FT OVER DREDGING VOLUMES



**LEGEND**  
 DREDGE AREAS  
 REUSE AREAS

**MISSION BAY NAVIGATIONAL SAFETY DREDGING**  
KEY MAP

CITY OF SAN DIEGO, CALIFORNIA  
PUBLIC WORKS DEPARTMENT  
SHEET 2 OF 13 SHEETS

WATER NO. 0-00000  
SEWER NO. 0-00000

FOR CITY ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_  
PROJECT MANAGER: **COSELYN GOODRICH**  
PROJECT ENGINEER: **TAMARA MILLER**

DESCRIPTION	BY	APPROVED	DATE	FILED
ORIGINAL	JK/XX			

SEE SHEETS  
CLASSY COOPERATIVE  
SEE SHEETS  
CLASSY COOPERATIVE

CONTRACTOR INSPECTOR: \_\_\_\_\_ DATE STARTED: \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_

39721-02-D

## INITIAL STUDY CHECKLIST

1. Project Title/Project Number: **MISSION BAY PARK NAVIGATIONAL SAFETY DREDGING/520687**

2. Lead agency name and address:

City of San Diego  
Department of Development Services  
1222 First Avenue, MS 501  
San Diego, CA 92101

3. Contact person and phone number: Mark Brunette/ (619) 446-5379

4. Project location:

The proposed project is occurs within the bay waters of Mission Bay and a small adjacent upland areas within Mission Bay Park for temporary construction staging. Mission Bay Park is bounded by the communities of Pacific Beach to the north, Ocean Beach to the south, Mission Beach to the west, and Clairemont Mesa to the east. The project site is located within the Mission Bay Park community area and City Council District 2. (See attached location maps).

5. Project Applicant/Sponsor's name and address:

City of San Diego Public Works Department – Engineering and Capital Projects, Right of Way Design Division

6. General Plan designation:

Park, Open Space and Recreation

7. Zoning:

The bay where dredging will occur does not have a zoning designation. The temporary upland staging area would be in the RS-1-7 (Single Family Residential) zone.

8. Description of project (Describe the whole action involved, including but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation.):

A SITE DEVELOPMENT PERMIT (SDP) for 63 acres of dredging within Mission Bay and impacts to wetlands. Proposed work includes maintenance dredging, reuse of dredged sediment, and temporary staging areas within bay water and vacant upland within 76 acres of bay water and sand beach. The impact to 43 acres of eelgrass will be restored post-construction.

Over the years, recreational boating, storms and water currents have impacted the bottom of Mission Bay causing sediment travel and creation of shoals - built up of areas with sand and displacement in other areas. In order to maintain the navigational water safety in the bay, the intent of the project is to dredge the bottom of the bay to the original survey elevation and utilize the dredged material to fill the depleted/reuse areas within the bay in accordance with the Mission Bay Baseline Chart.

The project work area includes approximately ~~82,8375.73~~ 82,837.73 acres of bay waters and sand beach, as well as temporary staging areas within approximately 2.50 acres of bay waters and 1.55 acres of vacant upland/disturbed land at south shores. A total of 63.36 acres of dredging would occur as part of this project, creating approximately 122,000 to 220,850 cubic yard of dredged material which would all be used onsite including within beach and subtidal borrow site fills totaling 19.47 acres. Borrow site fills will be planted to develop eelgrass habitat, as will dredged areas. The project provides for a 100 percent reuse of dredged materials with no material being exported from the bay.

As a result of project activities, approximately 42.93 acres of eelgrass would be impacted. Mitigation of eelgrass impacts is governed by multiagency adopted mitigation standards established in the California Eelgrass Mitigation Policy (CEMP) (National Marine Fisheries Service 2014). This policy requires either pre-developed eelgrass mitigation at a 1:1 ratio, or mitigation implemented coincident with impacts requiring successful establishment at a 1.2:1 mitigation ratio. A comprehensive eelgrass mitigation plan has been developed that meets the CEMP mitigation requirements.

Project staging would occur in proximity to the south shores launch ramp and will be located on a portion of City owned property (APN #435-480-1700). Access to the staging area would be taken from the south shores parking lot located off of Sea World Drive. Staging would include two on-water staging locations for storage of on-water equipment and berthing of work vessels as well as on upland/disturbed land (Tier IV habitat) where office trailers, equipment storage, contractor vehicle and related activity would occur. Existing and designated public parking areas would not be utilized for equipment storage or laydown.

In addition, Best management practices (BMPs), traffic controls to also include temporary park pathway diversions or closures lasting no more than 1-hour would be included as part of this project.

9: Surrounding land uses and setting: Briefly describe the project's surroundings:

The Mission Bay Park is the largest aquatic park of its kind in the country. It consists of over 4,600 acres in roughly equal parts land and water with 27 miles of shoreline. The bay waters of Mission Bay contain islands such as Vacation and Fleeta islands, and are surrounded by the upland active and passive recreation areas of Mission Bay Park. Mission Bay Park is surrounded by the communities of Mission Beach to the west, Pacific Beach to the north, Clairemont Mesa to the east, and Sea World and the Mission Bay access channel to the Pacific Ocean to the south.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):

United States Army Corps of Engineers, San Diego Regional Water Quality Control Board and California Department of Fish and Wildlife, and the California Coastal Commission.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Population/Housing              |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Hazards & Hazardous Materials      | <input type="checkbox"/> Public Services                 |
| <input type="checkbox"/> Air Quality                        | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Recreation                      |
| <input checked="" type="checkbox"/> Biological Resources    | <input checked="" type="checkbox"/> Land Use/Planning       | <input type="checkbox"/> Transportation/Traffic          |
| <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Mineral Resources                  | <input type="checkbox"/> Utilities/Service System        |
| <input type="checkbox"/> Geology/Soils                      | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Mandatory Findings Significance |

**DETERMINATION: (To be completed by Lead Agency)**

On the basis of this initial evaluation:

- The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required.
- Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or (MITIGATED) NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

**EVALUATION OF ENVIRONMENTAL IMPACTS:**

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.)
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

- 3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses", as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or (mitigated) negative declaration. *Section 15063(c)(3)(D)*. In this case, a brief discussion should identify the following:
  - a. Earlier Analysis Used. Identify and state where they are available for review.
  - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated", describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion. Please note, all reports and documents mentioned in this document are available for public review in the Entitlements Division on the Fifth Floor of 1222 First Avenue, San Diego.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
  - a. The significance criteria or threshold, if any, used to evaluate each question; and
  - b. The mitigation measure identified, if any, to reduce the impact to less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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I) AESTHETICS – Would the project:

- a) Have a substantial adverse effect on a scenic vista?

Proposed maintenance dredging within the open waters of Mission Bay and staging area on adjacent disturbed upland within Mission Bay Park have an anticipated construction time frame of five months. While this would be visible on a temporary basis, the staging area and all dredging equipment would be removed at the end of construction and the site and bay returned to its present condition. Furthermore, all dredging would occur under water and would not be visible. Since there would be no permanent change in public vistas, the proposed project would have a less than significant impact to public scenic vistas at Mission Bay Park and no mitigation would be required.

- b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

See answer to I.a. above. In addition, the project would not damage any existing scenic rock outcroppings, or historic buildings (Refer to V.a.) as none of these features are located within the boundaries of the proposed project. Furthermore, the project site is not located near a state scenic highway.

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?

See answer to I.a and I.b. above.

- d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

The project does not include any new or modified light sources such as new or replacement street lights, and the project would not utilize highly reflective materials. In addition, no substantial sources of light would be generated during project construction, as construction activities would occur during daylight hours. The project would also be subject to the City's Outdoor Lighting Regulations per Municipal Code Section 142.0740.

- II) AGRICULTURAL AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's Inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Converts Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project would occur in Mission Bay Park which is not designated for agricultural use or farmland. In addition, agricultural land is not present in the vicinity of the project.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Refer to II.a.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project would occur in Mission Bay Park which is not designated as forest land. In addition, forest land is not present in the vicinity of the project.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Refer to II.c.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project does not propose a change in land use and would not result in the conversion of Farmland since no Farmland exists within, or in the vicinity, of the project boundaries.

III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations - Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The proposed maintenance dredging would not involve any future actions that would

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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generate air quality emissions as a result of the proposed use (e.g. vehicle miles traveled). However, emissions would occur during the construction phase of the project and could increase the amount of harmful pollutants entering the air basin. The emissions would be minimal and would only occur temporarily during construction. Additionally, the construction equipment typically involved in a dredging project is small-scale and generates relatively few emissions and would comply with local Air Pollution Control District emissions regulations. When appropriate, dust suppression methods would be included as project components. As such, the project would not conflict with the region's air quality plan.

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Refer to III.b

- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

As described above, construction operations could temporarily increase the emissions of dust and other pollutants. However, construction emissions would be temporary and implementation of Best Management Practices would reduce potential impacts related to construction activities to below a level of significance. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standards.

- d) Expose sensitive receptors to substantial pollutant concentrations?

Construction operations could temporarily increase the emissions of harmful pollutants, which could affect sensitive receptors adjacent to the project. However, construction emissions would be temporary and it is anticipated that implementation of construction BMPs would reduce potential impacts related to construction activities to minimal levels. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations.

- e) Create objectionable odors affecting a substantial number of people?

Operation of construction equipment and vehicles could generate odors associated with fuel combustion. However, these odors would dissipate into the atmosphere upon release and would only remain temporarily in proximity to the construction equipment and vehicles. Therefore, the project would not create odors affecting a substantial number of people.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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IV. BIOLOGICAL RESOURCES – Would the project:

- |   |                          |                                     |                          |                          |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

Direct Impacts

A Biological Resource Letter Report (BLR) (December 18, 2016), and Eelgrass Mitigation and Monitoring Plan (Revised December 2016) were prepared by Merkel & Associates, Inc. for the Mission Bay Park Navigational Safety Dredging Project. These reports analyzed the impacts of the proposed project on the biological resources located in the vicinity of the project.

The BLR indicates that 42.93 acres of Shallow Bay – Eelgrass would be directly impacted by the proposed maintenance dredging. The BLR recommends that these impacts be mitigated at a 1.2:1 ratio (initial planting rate of 1.38:1 with a final success rate of 1:2:1) by transplantation of Eelgrass within the open waters of Mission Bay followed by a 5-year monitoring plan.

In order to apply this mitigation to the project, a post-dredging survey of the existing mitigation sites under the MOA will be completed and the mitigation ledgers will be updated and submitted as a part of the post-dredging eelgrass survey. These ledgers will provide a calculated offset of the total mitigation needed for the project. The residual eelgrass mitigation will be derived from restoration of the dredge areas and subtidal reuse areas to be restored to eelgrass under this mitigation plan.

Mitigation and Monitoring for direct impacts to Eelgrass are detailed in the Eelgrass Mitigation and Monitoring Plan prepared by Merkel & Associates, Inc. The mitigation program outlines site preparation, planting, monitoring, and success standards. The proposed mitigation would be expected to result in full offset of eelgrass impacts through eelgrass restoration in accordance with the California Eelgrass Mitigation Policy (NFMS 2014).

The Eelgrass Mitigation and Monitoring Plan is incorporated into the Mitigation, Monitoring and Reporting Program for this project by reference in Section V of this MND.

Indirect Impacts

The project may result in indirect impacts to sensitive biological resources because portions of the proposed project would occur within 100 feet of the City's MSCP Subarea Plan Multi Habitat Planning Area (MHPA). However, implementation of the MSCP Land Use Adjacency requirements, including mitigation for nesting avian species covered by the MSCP Subarea Plan, is included in the Mitigation, Monitoring and Reporting Program for this project as described in Section V of the MND, which will reduce potentially significant indirect impacts to biological resources to a less than significant level. The project will also be required to

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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comply with the requirements of the Migratory Birds Treaty Act (MBTA).

Special Status Species

There were no sensitive species observed within the project sites during the field surveys. The project sites are expected to be seasonally used by sensitive species as identified in Table 6 in the BLR.

Sensitive bird species that occasionally occur in the project site are the California brown pelican, double-crested cormorant, and California least tern. As discussed above, no nesting sites or communal roosts for California brown pelican or double-crested cormorant occur within or adjacent to the project area. These two species are only occasional visitors to the project area. However, both species are fish foragers (California brown pelican forages from the air, and double-crested cormorant dives from the water). Work is expected to be short-term and localized, although mobile as work progresses. Work would affect only a small area of the bay at any given time. As a result, and based on these factors, impacts of the proposed project on California brown pelican and double-crested cormorant are not considered to be significant.

California least tern nests within Mission Bay (with the closest nesting sites being less than 0.5 miles from dredge locations). Temporary turbidity during dredging will occur locally around the dredge. However, dredging will be completed prior to the arrival of least terns and thus work would be temporally separated from tern presence. This scheduling separation will protect terns from disturbance associated with the work. Even if dredging were to occur concurrent with tern presence, the scale of turbidity around the dredge is expected to be very small due to the predominantly sandy nature of dredge material to be removed late in the project schedule. As such, only a small portion of the bay (0.9 percent) would be affected if the turbidity plume were not allowed to extend beyond 500 feet from the dredge. Under such conditions, this amount of turbid environment would similarly not be considered significant with turbidity restrictions as specified.

Harbor seals and California sea lions are observed commonly in Mission Bay adjacent to the entrance channel and near bait barges and fishing docks and landings. These mammals are less common in central and inner portions of Mission Bay and are expected to occur infrequently within the project area. There are no established haul-out, foraging, or breeding areas used by these or other marine mammals within the project area or vicinity. Dredging and material reuse would be of a short duration and low impact level with regard to increasing localized. Marine mammals would be expected to not respond to the anticipated dredging and filling activities due to slow movement of the dredge, low incident noise generation in the water, and general limited occurrence of marine mammals within proximity to the proposed dredging and filling locations.

- b) Have a substantial adverse effect on any riparian habitat or other community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
 

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Refer to IV.a

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

Refer to IV.a. In addition, the project will obtain all permits that are required by the Army Corps of Engineers, Regional Water Quality Control Board, US Fish and Wildlife Service, California Coastal Commission, and CA Dept. of Fish and Wildlife prior to the start of work.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

As described in the BLR, No nursery or wildlife corridors occur within the project area. Therefore, the proposed project would have no impact on the movement of migratory fish or wildlife species or with migratory wildlife corridors.

- |   |                          |                                     |                          |                          |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

Refer to IV.a. The project would comply with all local policies and ordinances protecting biological resources including satisfying mitigation requirements for impacts to sensitive biological resources in accordance with the City of San Diego Multiple Species Conservation Program and the City of San Diego Biology Guidelines. Project mitigation includes compliance with the MSCP City of San Diego Subarea Plan MHPA land use agency guidelines.

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

Refer to IV.a and IV.e. The project would not conflict with any local conservation plans including the MSCP City of San Diego Subarea Plan.

V. CULTURAL RESOURCES – Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project involves the maintenance dredging in the open waters of Mission Bay which

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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contains no historical structures or resources. Therefore, the proposed project would not impact any designated historic structures or resources.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The proposed project involves maintenance dredging in areas of the open waters of Mission Bay that have been previously disturbed. It is unlikely that sensitive archaeological resources would be present in previously disturbed soil. Therefore, the proposed project would have a less than significant impact on archaeological resources and no mitigation would be required.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The proposed maintenance dredging would not exceed the City of San Diego's 10-foot excavation depth significance threshold for potential impacts to paleontological resources. Therefore, the project would have a less than significant impact on unique paleontological resources and no mitigation is required.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

No cemeteries, formal or informal, have been identified on or adjacent to the project site. While there is a possibility of encountering human remains during subsequent project construction activities, if remains are found monitoring would be required. In addition, per CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5), if human remains are discovered during construction, work would be required to halt in that area and no soil would be exported off-site until a determination could be made regarding the provenance of the human remains via the County Coroner and other authorities as required.

VI. GEOLOGY AND SOILS - Would the project:

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:   |                          |                          |                                     |                          |
| 1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The project does not involve the construction of any structures and includes only the removal of surficial sediment as part of maintenance dredging within the open water of Mission Bay. Therefore, risks from rupture of a known earthquake fault would be less

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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than significant.

- |                                    |                          |                          |                                     |                          |
|------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|

See VI.a.i. above.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

See VI.a above.

- |                 |                          |                          |                                     |                          |
|-----------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|-----------------|--------------------------|--------------------------|-------------------------------------|--------------------------|

See VI.a. above.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Refer to VI.a. Furthermore, since the project involves only dredging in the open waters of Mission Bay and no grading of upland soil outside these open waters is proposed, no soil erosion would occur.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Refer to VI.a. The project is not located on a geologic unit or soil that is unstable. In addition, utilization of standard construction practices would ensure that the potential impacts would be less than significant.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Refer to VI.a.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Refer to VI.a. In addition, no septic or alternative wastewater systems are proposed since the scope of the project is maintenance dredging within the open waters of Mission Bay.

VII. GREENHOUSE GAS EMISSIONS – Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

The project involves a relatively limited five month duration of construction. In addition, the project would not result in operational greenhouse gas emissions. Under Step 1 of the CAP Checklist the proposed project is consistent with the existing General Plan and Community Plan land use designations, and zoning designations for the project site because these designations allow for the maintenance of the Mission Bay Park open space and recreational facilities including for the purpose of maintaining safe navigation within the open waters of Mission Bay. Therefore, the proposed project is consistent with the growth projections and land use assumptions used in the CAP.

Furthermore, completion of the Step 2 of the CAP Checklist for the project demonstrates that the CAP strategies for reduction in GHG emissions are not applicable to the project because it is a maintenance dredging project with no habitable space or operational GHG emissions, and does not require a building permit or certificate of occupancy.

Therefore, the project has been determined to be consistent with the City of San Diego Climate Action Plan, would result in a less than significant impact on the environment with respect to Greenhouse Gas Emissions, and further GHG emissions analysis and mitigation would not be required.



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Refer to VII.a.

VIII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Construction of the project may require the use of hazardous materials (e.g. fuels, lubricants, solvents, etc.) which would require proper storage, handling, use and disposal. Construction specifications would include requirements for the contractor regarding where routine handling or disposal of hazardous materials could occur and what measures to implement in the event of a spill from equipment. Compliance with contract specifications would ensure that potential hazards are minimized to below a level of significance.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Proposed maintenance would be unlikely to traverse properties which could contain Leaking Underground Storage Tank (LUST) cleanup sites, permitted UST's, or contaminated sites located within 1,000 feet of the project alignments; however, in the event that construction activities encounter underground contamination, the contractor would be required to implement section 803 of the City's "WHITEBOOK" for "Encountering or Releasing Hazardous Substances or Petroleum Products" of the City of San Diego Standard Specifications for Public Works Construction which is included in all construction documents and would ensure the proper handling and disposal of any contaminated soils in accordance with all applicable local, state, and federal regulations. Compliance with these requirements would minimize the risk to the public and the environment; therefore, impacts would remain less than significant.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The proposed project is not located within one-quarter mile of existing schools and it is unlikely that these activities could result in the release of hazardous emissions as a result of unanticipated contamination that is encountered within the open waters of Mission Bay. However, section 803 of the City's "WHITEBOOK" to ensure that appropriate protocols are followed pursuant to County DEH requirements should any hazardous conditions be encountered. As such, impacts regarding the handling or discovery of hazardous materials, substances or waste within close proximity of a school would be below a level of significance.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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with implementation of the measures required pursuant to the contract specifications and County DEH oversight.

- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

See VIIIa-c above. In addition, the area of proposed dredging is not included on a list of hazardous materials locations.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two mile of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

The proposed maintenance dredging is not located within the Airport Influence Area of Airport Land Use Compatibility Plan or within 2 miles of a public airport. Therefore, the project would not introduce any new features that would result in a safety hazard for people residing or working in the area, or create a flight hazard.

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project site is not within proximity of a private airstrip.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

Construction of the proposed project would temporarily affect traffic circulation within the project Area of Potential Effect (APE) and its adjoining roads. However, an approved Traffic Control Plan would be implemented during construction which would allow emergency plans to be employed. Therefore, the project would not physically interfere with and adopted emergency response plan or emergency evacuation plan.

- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

The proposed project would be located at Mission Bay Park. However, the proposed maintenance dredging would not introduce any new features that are combustible or would increase the risk of fire and there are no wildland areas in the vicinity of the project site.

IX. HYDROLOGY AND WATER QUALITY - Would the project:

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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- a) Violate any water quality standards or waste discharge requirements?

Potential impacts to existing water quality standards associated with the proposed project would include minimal short-term construction-related erosion sedimentation, but would not include any long term operational storm water impacts. The upland staging area shall be stabilized with appropriate BMPs including a stabilized entrance, silt curtains on the staging area perimeter, and fiber rolls as appropriate to the use. Upon vacating the site the staging area will be stabilized in accordance with the project Water Pollution Control Plan.

The project would be required to comply with the City's Storm Water Standards Manual and would have to comply with a Water Pollution Control Plan for the project. These plans would prevent or effectively minimize short-term water quality impacts during construction activities. Therefore, the proposed project would not violate any existing water quality standards or discharge requirements.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The project does not use groundwater, nor would it create new impervious surfaces that would interfere with groundwater recharge.

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

Proposed maintenance dredging would occur under water so it would not alter an existing drainage pattern. In addition, the temporary construction staging area will not alter existing grade so it would not alter an existing drainage pattern. Thus, the project would not result in substantial erosion or siltation on- or off-site.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

Refer to IX.c.

- e) Create or contribute runoff water, which would

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Refer to IX.c. The project would be required to comply with all local and regional storm water quality standards during construction using approved Best Management Practices (BMPs), which would ensure that water quality is not degraded.

- f) Otherwise substantially degrade water quality?

Refer to IX.c. In addition, The proposed work has the potential to result in short-term increases in localized turbidity in the area of project dredging and material placement for beneficial reuse. In order to minimize the potential for adverse effects of increased turbidity measures shall be taken to control turbidity generation around the dredge to an extent of not more than 500 feet of a visible turbidity plume from the dredge. Because work is needed in areas of high current flow, it is anticipated that the local turbidity plume may elongate rather than spreading radially around the dredge or fill location. Should this occur, the contractor shall be held to a comparable plume area as a radial plume of 500 foot radius, but may measure the plume as an elongated feature using the long and short axis to calculate the area of the plume as an ellipse.

Should water quality limits be exceeded, the contractor shall be required to stop dredging or placing, slow the rate of work, move to a new location to work until a tidal change, or take other corrective actions to get the turbidity levels back in check.

Furthermore, the project would be required to comply with all local and regional storm water quality standards during construction using approved Best Management Practices (BMPs), which would ensure that water quality is not degraded.

- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project does not propose any housing.

- h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?

The project does not propose any structures that would impede flood flows as it is a bay maintenance dredging project.

- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The proposed project does not include any features that would increase the risk associated with flooding beyond those of existing conditions.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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- j) Inundation by seiche, tsunami, or mudflow?

The proposed project does not include any features that would increase the risk associated with inundation by seiche, tsunami, or mudflow beyond those of existing conditions.

X. LAND USE AND PLANNING – Would the project:

- a) Physically divide an established community?

The project would involve maintenance dredging in the open waters of Mission Bay and a temporary upland construction staging area. Therefore, the project would not introduce new features that could divide an established community.

- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The project would involve maintenance dredging in the open waters of Mission Bay and a temporary upland construction staging area, and would be consistent with all applicable land use plans, policies, or regulations of an agency with jurisdiction over the project and would not conflict with any land use plans.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Refer to IV. Neither the proposed dredging nor the temporary staging area would occur inside the MHPA preserve, but some of the proposed maintenance dredging may occur within 100 feet of an MHPA preserve area boundary of the City of San Diego Multiple Species Conservation Program Subarea Plan. However, the project will implement the MSCP Land Use Adjacency Guidelines as described in the Mitigation, Monitoring and Reporting Program in Section V of this MND. Implementation of the Land Use Adjacency Guidelines would conform to the MSCP Subarea Plan and would reduce potentially significant indirect impacts to biological resources within the MHPA to a less than significant level.

- d) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Mission Bay Park not being used for the recovery of mineral resources and are not designed by the General Plan or other local, state or federal land use plan for mineral resources recovery; therefore, the project would not result in the loss of mineral resources.

- e) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Refer to X.e.

XII. NOISE -- Would the project result in:

- a) Generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The project would not result in the generation of operational noise levels in excess of existing standards or existing ambient noise levels in the vicinity of the project.

- b) Generation of excessive ground borne vibration or ground borne noise levels?

The project would not result in the generation of operational ground borne vibration or noise levels in excess of existing standards or ambient levels.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Refer to XII.a-b

- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project?

The proposed maintenance dredging project would result in construction noise, but would be temporary in nature; in addition, the project is required to comply with the San Diego Municipal Code, Chapter 5, Article 9.5, (§59.5.0404 Construction Noise). This section specifies that it is unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays (with exception of Columbus Day and Washington's Birthday), or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. In addition, the project would be required to conduct any construction activity so as to not cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 a.m. to 7:00 p.m.

- e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport would the project expose people residing or working in the area to excessive noise levels?

The proposed dredging is not located within the Airport Influence Area of an Airport Land Use Compatibility Plan or within 2 miles of a public airport. Therefore, it is not within the airport 60 CNEL noise contour so people working on the project would not be exposed to

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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excessive airport noise levels. The project, in and of itself, would not generate substantial operational noise. Furthermore, compliance with OSHA standards will ensure the project workers would not be exposed to excessive noise levels.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project site is not located within the vicinity of a private airstrip.

XIII. POPULATION AND HOUSING-- Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project scope does not include the construction of new or extended roads or infrastructure, or new homes and businesses. The project would involve maintenance dredging of the open waters of Mission Bay. Therefore, the project would not induce population growth nor require the construction of new infrastructure.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

No such displacement would result. There is no existing housing within the boundaries of the proposed project.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

No such displacement would result. There is no existing housing or residents within the boundaries of the project.

XIV. PUBLIC SERVICES

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project result in substantial adverse physical impacts associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services: |                          |                          |                          |                                     |
| i) Fire Protection  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project would not result in adverse physical impacts of fire facilities or adversely affect

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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existing levels of fire services.

ii) Police Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project would not affect existing levels of police protection service and would not require the construction or expansion of a police facility.

iii) Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------	--------------------------	--------------------------	--------------------------	-------------------------------------

The project would not affect existing levels of public services and would not require the construction or expansion of a school facility.

v) Parks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
----------	--------------------------	--------------------------	--------------------------	-------------------------------------

The project would not affect existing levels of public services and would not require the construction or expansion of a park facility.

vi) Other public facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
-----------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------

The project would not affect existing levels of public services; therefore, no new or altered government facilities would be required.

**XV. RECREATION -**

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

The project would not adversely affect the availability of and/or need for new or expanded recreational resources. The project would actually improve the navigational safety of the open waters of Mission Bay through maintenance dredging that would remove sediment on the bottom of the bay that currently impedes watercraft travel and poses a potential safety hazard.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

Refer to XV.a. The project does not propose recreation facilities or require the construction or expansion of any such facilities.

**XVI. TRANSPORTATION/TRAFFIC – Would the project?**

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------	--------------------------



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Construction of the proposed project would temporarily affect traffic circulation within the project Area of Potential Effect (APE) and its adjoining roads. However, an approved Traffic Control Plan would be implemented during construction such that traffic circulation would not be substantially impacted. Therefore, the project would not result in any significant permanent increase in traffic generation or level of service.

- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Construction of the proposed project would temporarily affect traffic circulation within the project Area of Potential Effect (APE) and its adjoining roads. However, an approved Traffic Control Plan would be implemented during construction so that existing cumulative or individual levels of service are minimally impacted. Therefore, the project would not result in any significant permanent increase in traffic generation or permanent reduction in level of service.

- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Refer to XVI.c. In addition, the project would not result in safety risks or a change to air traffic patterns in that all work would occur underground.

- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The project would not create a permanent increase in hazards resulting from design features and would reduce temporary hazards due to construction to a less than significant level through a Traffic Control Plan. The project does not propose any change in land use that would affect existing land uses in the area.

- e) Result in inadequate emergency access?

Construction of the proposed project would temporarily affect traffic circulation within the project Area of Potential Effect (APE) and its adjoining roads. However, an approved Traffic Control Plan would be implemented during construction such that emergency access would not be substantially impacted. Therefore, the project would not result in inadequate

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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emergency access.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

The project may temporarily impact circulation during construction activities relative to traffic, pedestrians, public transit and bicycles. However, the preparation of a Traffic Control Plan would ensure that any disruption to these services would not be significant.

XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The proposed maintenance dredging would not affect the City's wastewater treatment system. Therefore, the project would not exceed the requirements of the Regional Quality Control Board.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

The proposed maintenance dredging would not affect the City's wastewater treatment system. It would not affect the water or wastewater systems and would, therefore, not result in a significant unmitigated impact on the environment.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The proposed maintenance dredging does not propose or require the construction substantial new drainage facilities. Therefore, the project would not require the construction of new storm water drainage facilities or expansion of existing facilities.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Construction of the proposed project would not increase the demand for water within the project area.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Refer to XVII.c

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Construction of the project would likely generate minimal waste. Project waste would be disposed of in accordance with all applicable local and state regulations pertaining to solid waste including the permitted capacity of the landfill serving the project area. Demolition or construction materials which can be recycled shall comply with the City's Construction and Demolition Debris Ordinance. Operation of the project would not generate waste and, therefore, would not affect the permitted capacity of the landfill serving the project area.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| g) Comply with federal, state, and local statutes and regulation related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Refer to XVII.f. Any solid waste generated during construction related activities would be recycled or disposed of in accordance with all applicable local, state and federal regulations.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE -

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

Although the proposed project could have significant direct and indirect impacts to sensitive biological resources, these impacts would be mitigated to a less than significant level by the mitigation measures identified in the Mitigation Monitoring and Reporting Program in Section V of the MND. These mitigation requirements are also consistent with the MSCP City of San Diego Subarea Plan. With respect to cultural resources, mitigation measures for potential impacts to archaeological and paleontological resources are not required due to the fact that only previously disturbed soils would be affected. Historical built environmental resources would not be significantly impacted by the project as stated in the Initial Study.

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
-------	--------------------------------	--	------------------------------	-----------

The City of San Diego MSCP Subarea Plan addresses cumulative impacts on biological resources throughout San Diego. Since the mitigation measures identified in Section V of the MND are consistent with the land use adjacency requirements as well as nesting bird requirements of the Subarea Plan, the proposed project is consistent with the Subarea Plan. As a result, project implementation would not result in any individually limited, but cumulatively significant impacts to these resources. Based on the project's consistency with the Climate Action Plan it would not result in cumulatively considerable environmental impacts relative to greenhouse gas emissions.

Furthermore, when considering all potential environmental impacts of the proposed project, including impacts identified as less than significant in the Initial Study Checklist, together with the impacts of other present, past and reasonably foreseeable future projects, there would not be a cumulatively considerable impact on the environment.

- c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

As evidenced by the Initial Study Checklist, no other substantial adverse effects on human beings, either indirectly or directly, would occur as a result of project implementation.

## INITIAL STUDY CHECKLIST

### REFERENCES

#### I. AESTHETICS / NEIGHBORHOOD CHARACTER

- City of San Diego General Plan; City of San Diego Land Development Municipal Code
- Community Plan.
- Local Coastal Plan.

#### II. AGRICULTURAL RESOURCES & FOREST RESOURCES

- City of San Diego General Plan.
- U.S. Department of Agriculture, Soil Survey - San Diego Area, California, Part I and II, 1973.
- California Agricultural Land Evaluation and Site Assessment Model (1997)
- Site Specific Report:

#### III. AIR QUALITY

- California Clean Air Act Guidelines (Indirect Source Control Programs) 1990.
- Regional Air Quality Strategies (RAQS) - APCD.
- Site Specific Report:

#### IV. BIOLOGY

- City of San Diego, Multiple Species Conservation Program (MSCP), Subarea Plan, 1997
- City of San Diego, MSCP, "Vegetation Communities with Sensitive Species and Vernal Pools" Maps, 1996.
- City of San Diego, MSCP, "Multiple Habitat Planning Area" maps, 1997.
- Community Plan - Resource Element.
- California Department of Fish and Game, California Natural Diversity Database, "State and Federally-listed Endangered, Threatened, and Rare Plants of California," January 2001.
- California Department of Fish & Game, California Natural Diversity Database, "State and Federally-listed Endangered and Threatened Animals of California," January 2001.
- City of San Diego Land Development Code Biology Guidelines.

- Site Specific Reports: Biological Resource Letter Report dated December 18, 2016 and Eelgrass Mitigation and Monitoring Program revised December 2016 for the Mission Bay Navigational Safety Dredging Project by Merkel & Associates, Inc.

**V. CULTURAL RESOURCES (INCLUDES HISTORICAL RESOURCES)**

- City of San Diego Historical Resources Guidelines.
- City of San Diego Archaeology Library.
- Historical Resources Board List.
- Community Historical Survey:
- Site Specific Reports:

**VI. GEOLOGY/SOILS**

- City of San Diego Seismic Safety Study.
- U.S. Department of Agriculture Soil Survey - San Diego Area, California, Part I and II, December 1973 and Part III, 1975.
- Site Specific Report(s):

**VII. GREENHOUSE GAS EMISSIONS**

- City of San Diego Climate Action Plan, Adopted 2015

**VIII. HAZARDS AND HAZARDOUS MATERIALS**

- San Diego County Hazardous Materials Environmental Assessment Listing,
- San Diego County Hazardous Materials Management Division
- FAA Determination
- State Assessment and Mitigation, Unauthorized Release Listing, Public Use Authorized.
- Airport Land Use Compatibility Plan.
- Site Specific Report:

**IX. HYDROLOGY/WATER QUALITY**

- Flood Insurance Rate Map (FIRM).
- Federal Emergency Management Agency (FEMA), National Flood Insurance Program - Flood Boundary and Floodway Map.
- Clean Water Act Section 303(b) list, [http://www.swrcb.ca.gov/tmdl/303d\\_lists.html](http://www.swrcb.ca.gov/tmdl/303d_lists.html).

\_\_\_ Site Specific Reports:

**X. LAND USE AND PLANNING**

- City of San Diego General Plan.
- Community Plan.
- Airport Land Use Compatibility Plan
- City of San Diego Zoning Maps
- \_\_\_ FAA Determination

**XI. MINERAL RESOURCES**

- \_\_\_ California Department of Conservation - Division of Mines and Geology, Mineral Land Classification.
- \_\_\_ Division of Mines and Geology, Special Report 153 - Significant Resources Maps.
- \_\_\_ Site Specific Report:

**XII. NOISE**

- Community Plan
- \_\_\_ San Diego International Airport - Lindbergh Field CNEL Maps.
- \_\_\_ Brown Field Airport Master Plan CNEL Maps.
- \_\_\_ Montgomery Field CNEL Maps.
- \_\_\_ San Diego Association of Governments - San Diego Regional Average Weekday Traffic Volumes.
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG.
- City of San Diego General Plan.
- \_\_\_ Site Specific Report:

**XIII. PALEONTOLOGICAL RESOURCES**

- City of San Diego Paleontological Guidelines.
- \_\_\_ Deméré, Thomas A., and Stephen L. Walsh, "Paleontological Resources City of San Diego," Department of Paleontology San Diego Natural History Museum, 1996.
- Kennedy, Michael P., and Gary L. Peterson, "Geology of the San Diego Metropolitan Area, California. Del Mar, La Jolla, Point Loma, La Mesa, Poway, and SW 1/4 Escondido 7 1/2

Minute Quadrangles," California Division of Mines and Geology Bulletin 200, Sacramento, 1975.

Kennedy, Michael P., and Siang S. Tan, "Geology of National City, Imperial Beach and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California," Map Sheet 29, 1977.

Site Specific Report:

**XIV. POPULATION / HOUSING**

- City of San Diego General Plan.
- Community Plan.
- Series 11 Population Forecasts, SANDAG.
- Other:

**XV. PUBLIC SERVICES**

- City of San Diego General Plan.
- Community Plan.

**XVI. RECREATIONAL RESOURCES**

- City of San Diego General Plan.
- Community Plan.
- Department of Park and Recreation
- City of San Diego - San Diego Regional Bicycling Map
- Additional Resources:

**XVII. TRANSPORTATION / CIRCULATION**

- City of San Diego General Plan.
- Community Plan.
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG.
- San Diego Region Weekday Traffic Volumes, SANDAG.
- Site Specific Report:



**XVIII. UTILITIES**

X City of San Diego General Plan.

X Community Plan.

**XIX. WATER CONSERVATION**

X City of San Diego General Plan.

X Community Plan.

— Sunset Magazine, New Western Garden Book. Rev. ed. Menlo Park, CA: Sunset Magazine.

**APPENDIX B**  
**INTENTIONALLY LEFT BLANK**

**APPENDIX C**

**MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE**

### **Materials Typically Accepted by Certificate of Compliance**

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

**APPENDIX D**  
**SAMPLE CITY INVOICE**

City of San Diego, CM&FS Div., 9753 Chesapeake Drive, SD CA 92123

**Project Name:**

Work Order No or Job Order No.

City Purchase Order No.

Resident Engineer (RE):

RE Phone#: Fax#:

**Contractor's Name:**

Contractor's Address:

Contractor's Phone #:

Contractor's fax #:

Contact Name:

**Invoice No.**

**Invoice Date:**

Billing Period: ( To )

Item #	Item Description	Contract Authorization			Previous Totals To Date		This Estimate		Totals to Date		
		Unit	Price	Qty	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1					\$ -		\$ -		\$ -	0.00	\$ -
2					\$ -		\$ -		\$ -	0.00%	\$ -
3					\$ -		\$ -		\$ -	0.00%	\$ -
4					\$ -		\$ -		\$ -	0.00%	\$ -
5					\$ -		\$ -		\$ -	0.00%	\$ -
6					\$ -		\$ -		\$ -	0.00%	\$ -
7					\$ -		\$ -		\$ -	0.00%	\$ -
8					\$ -		\$ -		\$ -	0.00%	\$ -
5					\$ -		\$ -		\$ -	0.00%	\$ -
6					\$ -		\$ -		\$ -	0.00%	\$ -
7					\$ -		\$ -		\$ -	0.00%	\$ -
8					\$ -		\$ -		\$ -	0.00%	\$ -
9					\$ -		\$ -		\$ -	0.00%	\$ -
10					\$ -		\$ -		\$ -	0.00%	\$ -
11					\$ -		\$ -		\$ -	0.00%	\$ -
12					\$ -		\$ -		\$ -	0.00%	\$ -
13					\$ -		\$ -		\$ -	0.00%	\$ -
14					\$ -		\$ -		\$ -	0.00%	\$ -
15					\$ -		\$ -		\$ -	0.00%	\$ -
16					\$ -		\$ -		\$ -	0.00%	\$ -
17	<b>Field Orders</b>				\$ -		\$ -		\$ -	0.00%	\$ -
					\$ -		\$ -		\$ -	0.00%	\$ -
	<b>CHANGE ORDER No.</b>				\$ -		\$ -		\$ -	0.00%	\$ -
					\$ -		\$ -		\$ -	0.00%	\$ -
	Total Authorized Amount (including approved Change Order)				\$ -		\$ -		\$ -	<b>Total Billed</b>	\$ -

**SUMMARY**

A. Original Contract Amount	\$ -
B. Approved Change Order #00 Thru #00	\$ -
C. Total Authorized Amount (A+B)	\$ -
D. Total Billed to Date	\$ -
E. Less Total Retention (5% of D )	\$ -
F. Less Total Previous Payments	\$ -
<b>G. Payment Due Less Retention</b>	<b>\$0.00</b>
H. Remaining Authorized Amount	\$0.00

I certify that the materials  
have been received by me in  
the quality and quantity specified

Resident Engineer

Construction Engineer

**Retention and/or Escrow Payment Schedule**

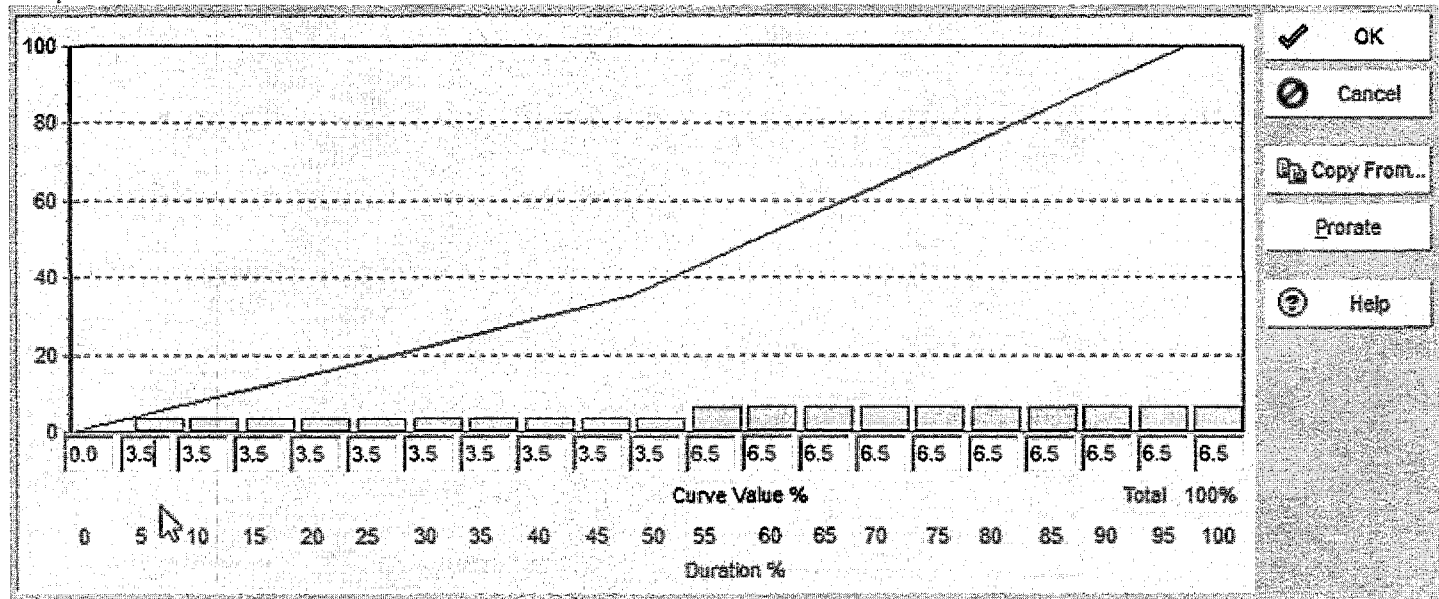
Total Retention Required as of this billing (Item E)	\$0.00
Previous Retention Withheld in PO or in Escrow	\$0.00
<b>Add'l Amt to Withhold in PO/Transfer in Escrow:</b>	<b>\$0.00</b>
<b>Amt to Release to Contractor from PO/Escrow:</b>	

Contractor Signature and Date: \_\_\_\_\_

## Sample Project Spend Curve

	Sample Date Entries Required																				
Incremental Curve Value	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	
Duration % Increment	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%

Sample Screenshot from Primavera P6



**APPENDIX E**  
**LOCATION MAP**



# Mission Bay Navigational Safety Dredging

## Project Location Map



**APPENDIX F**  
**BIOLOGICAL RESOURCE AND WATER QUALITY LETTER REPORT**

**BIOLOGICAL RESOURCE AND WATER QUALITY LETTER REPORT  
MISSION BAY NAVIGATIONAL SAFETY DREDGING PROJECT**

*December 2016*

**ABSTRACT**

Merkel & Associates, Inc. (M&A) has prepared this biological resource and water quality letter report for the proposed Mission Bay Navigational Safety Dredging. The purpose of this report is to document the existing biological conditions within the project study area; identify potential impacts to biological resources and water quality that could result from implementation of the proposed project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state, and local rules and regulations, and adopted policy. This document is further intended to address analytical needs under the California Environmental Quality Act (CEQA) and the City of San Diego (City) Multiple Species Conservation Program (MSCP) Subarea Plan (1997) and Biology Guidelines (2012a).

The project location is situated at multiple locations within the waters and public beaches of Mission Bay. These include dredge sites within both the west and east basins of Mission Bay, beach and in-bay reuse areas, and an upland and in-bay staging area on disturbed lands at South Shores and within South Pacific Passage east of Sea World. The work area includes maintenance dredging and reuse of dredged sediments within approximately 76 acres of bay waters and sand beach, and temporary contractor staging within approximately 2.5 acres of bay waters, and 1.5 acres of vacant uplands at South Shores.

The project work is strictly maintenance dredging, replacement of sand back to origin beach areas, and reuse of dredged materials to develop compensatory eelgrass mitigation through backfill of previously dredged deep basins and planting eelgrass back into dredge areas and onto raised bay floor areas within the sediment reuse areas. Maintenance dredging extents are defined by prior bay chart conditions. Section 55.2 of the City of San Diego Charter, provides for a Mission Bay Park Improvement Fund with a purpose of funding projects that restore wetlands, wildlife habitat and other environmental assets within the Mission Bay Park Improvement Zone, and projects that preserve the beneficial uses of Mission Bay Park. The first identified priority stated in the Charter is to restore navigable waters and eliminate navigational hazards within Mission Bay Park. This project would achieve this objective.

The project would not result in significant impacts to upland habitats as the project work is restricted to unvegetated beach areas subject to grooming by the City Parks & Recreation

Department mechanized beach crews and temporary contractor staging within disturbed portions of a vacant pad at the South Shores Launch Ramp. Maintenance activities are limited to areas of waters of the U.S. with all but the narrow high fringe of the beach work areas falling outside of navigable waters. Significant impacts would occur to eelgrass as a result of the maintenance dredging. These impacts are to be mitigated under this project by the restoration of eelgrass to compensate for impacts as established under the California Eelgrass Mitigation Policy (CEMP) (National Marine Fisheries Service [NMFS] 2014). This mitigation policy is the multi-agency accepted policy that replaces the previously utilized Southern California Eelgrass Mitigation Policy (SCEMP) (NMFS 1991). Eelgrass impacts are anticipated to be fully mitigated to a less than significant level through implementation of a compensatory mitigation plan incorporated as a part of this project work. Best management practices for upland staging would eliminate potential adverse impacts associated with sediment discharge to the bay or erosion damage at the staging site.

No impacts to sensitive plant or animal species, including rare, threatened or endangered species are expected to occur as a result of the project implementation. Potential significant impacts to California least terns are to be avoided by completing dredging and filling activities outside of the tern breeding season with work being completed between October and April. Although planting of eelgrass will continue through the summer following completion of dredging, this activity does not result in any disturbance beyond that of normal bay usage and is not expected to result in impacts to terns. The work is not expected to adversely affect marine mammals or sea turtles as the project areas do not receive high use by marine mammals and sea turtles. The work would not alter any nesting or roosting sites and would not disrupt any or migratory or wildlife travel routes. The project would comply with regulatory requirements of the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Codes §3503 and §3513 by avoidance of disruption of avian nesting activities due to project location and timing.

The project is expected to result in short-term temporary increases in local turbidity levels during dredging and material placement. These impacts are to be mitigated by incorporation of water quality monitoring and turbidity elevation limits requiring the contractor to reduce turbidity generation if elevation exceeds acceptable thresholds. Because of the clean sediment nature of material being dredged and the short-term construction period increase in turbidity levels, with the construction period mitigation measures, project impacts to water quality are expected to be fully mitigated.

In addition to City of San Diego approval, the proposed work requires permit action under section 10 of the Rivers & Harbors Act for work within navigable waters of the U.S. The project also requires authorization under section 404 of the federal Clean Water Act (CWA) for discharge of

dredged materials into waters of the U.S. Through this federal permit requirement, the project is also subject to state water quality certification under section 401 of the CWA, consultation between the Army Corps of Engineers and NMFS under the Magnuson-Stevens Fishery Conservation and Management Act, and a Coastal Consistency Determination under the Coastal Zone Management Act. The project will also require a Coastal Development Permit under the California Coastal Act.

There are not anticipated to be any unmitigated impacts to biological resources or water quality anticipated from this project following full implementation of the identified mitigation measures.

## INTRODUCTION

Merkel & Associates Inc. (M&A) was retained by the City of San Diego (City) to review bathymetry and sediment dynamics within Mission Bay, in San Diego, California, and subsequently, to complete a baywide bathymetry and eelgrass (*Zostera marina*) distribution survey. Subsequent to this investigation, M&A was engaged to support the City with identifying boundaries of navigational hazards, conducting sediment characterization, and identification of project impacts and mitigation measures suitable to mitigate project impacts. The project area is located within the waters and minor upland areas around Mission Bay (Figure 1).

Section 55.2 of the City of San Diego Charter, provides for a Mission Bay Park Improvement Fund with a purpose of funding projects that restore wetlands, wildlife habitat and other environmental assets within the Mission Bay Park Improvement Zone, and projects that preserve the beneficial uses of Mission Bay Park. The first identified priority stated in the Charter is to restore navigable waters and eliminate navigational hazards within Mission Bay Park. This project would achieve this objective. The San Diego Fire Department, Lifeguard Services and the Mission Bay Park Improvement Fund Oversight Committee have accepted identification of areas within the bay that currently require maintenance dredging in order to remove shoals that are causing navigational safety hazards. Project engineering plans to implement the project have been prepared by Rick Engineering Company (2016) and are the basis for analyses included in this document.

M&A has prepared this biological resource and water quality letter report for the proposed project. The purpose of this report is to document the existing site conditions in the project study area; identify potential impacts to biological resources and water quality that could result from implementation of the proposed project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state, and local rules and regulations including the California Environmental Quality Act (CEQA) and City of San Diego (City) Multiple Species Conservation Program (MSCP) Subarea Plan (1997) and Biology Guidelines (2012). This report identifies the expected impacts of project implementation on existing biological resources and bay water quality. It further analyzes the potential effects of the project. Where significant impacts are identified, mitigation measures are identified to address these impacts.

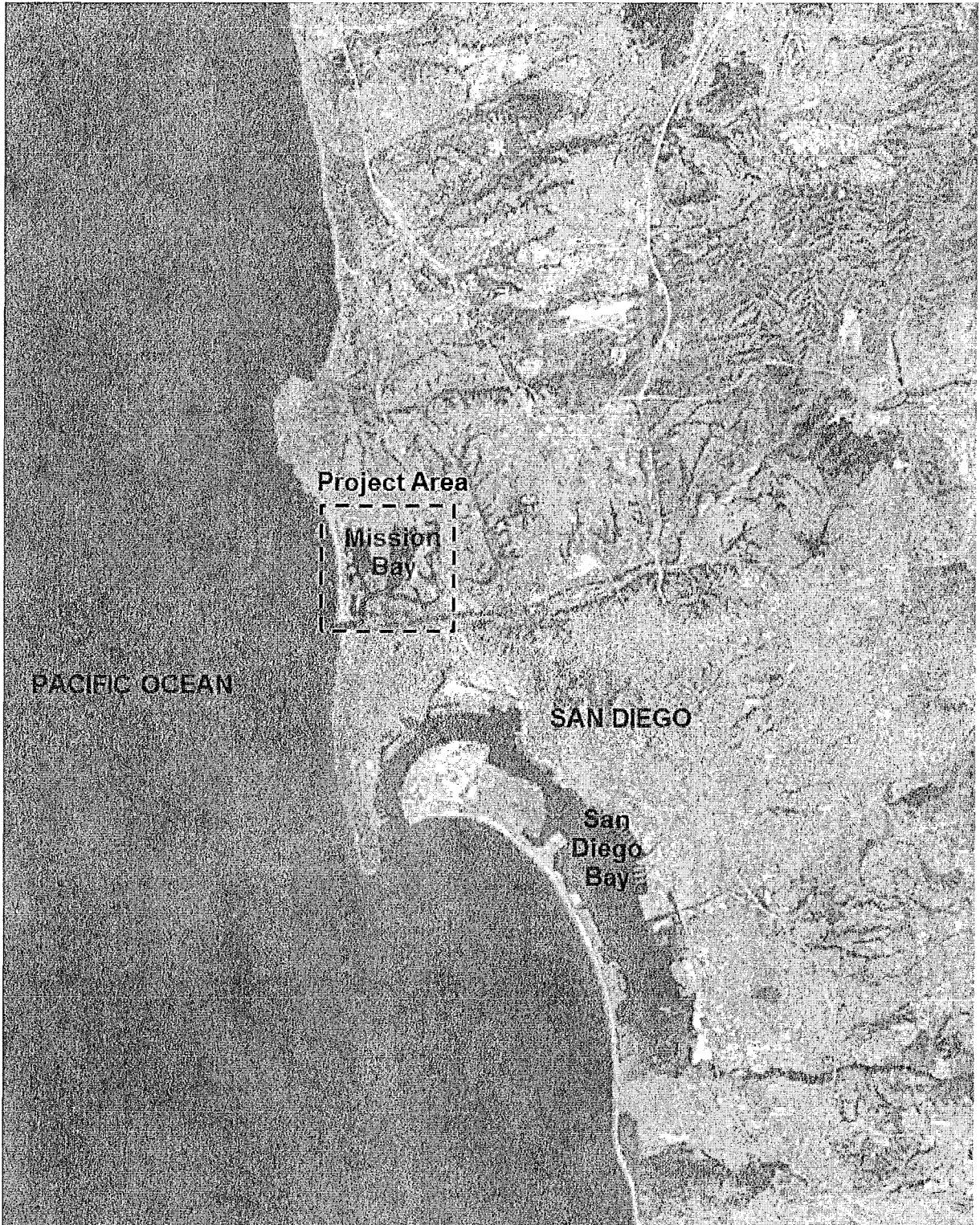


Figure 1. Project Vicinity Map

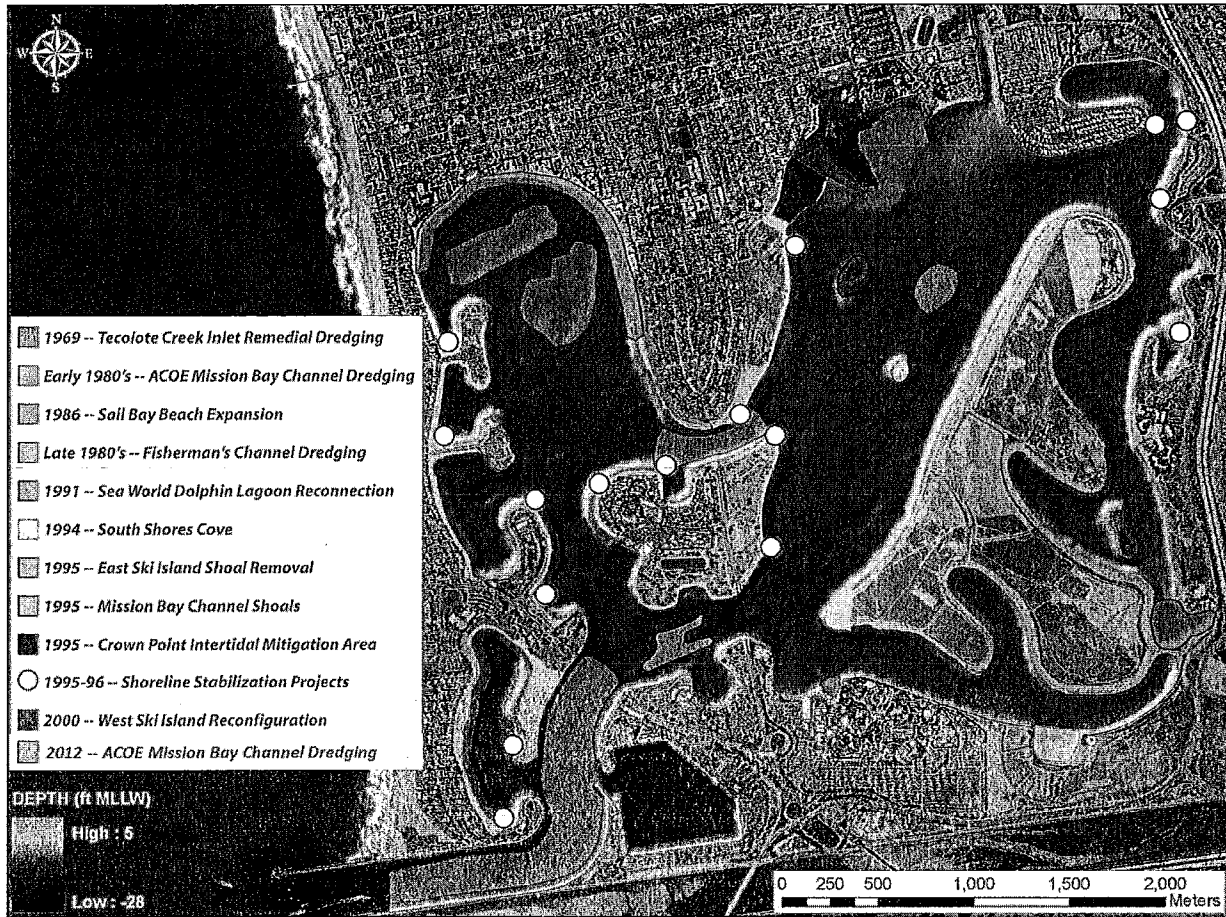
## SITE SETTING

Prior to the 1920's Mission Bay was essentially a tidal mudflat, separated from the Pacific Ocean by a sand spit that is the location of the present day community of Mission Beach. Between 1935 and 1948 the first deeper water was developed within the western basin of Mission Bay and by 1958 much of the shape of present day Mission Bay had been developed except for the southeasterly portion of the Bay which retained marshlands from the San Diego River delta that had been relocated out of Mission Bay by the Army Corps of Engineers channelization of the river mouth between 1948 and 1951. As development progressed the majority of work constructing modern day Mission Bay completed by 1963. Since that time there have been numerous localized maintenance dredging and shoreline activities through to the present.

Major dredging and bay modification projects since 1963 include the dredging of the Tecolote Creek Inlet to remove sediment in approximately 1970, the Army Corps of Engineers dredging of approximately 540,000 cy of sediment from the federal entrance channel in approximately 1983, alteration of the Quivira Basin wave barrier and cutting of a relief weir in the southern jetty of the entrance channel by the Army Corps, both in the mid-1980s. These two actions altered wave environments in the bay and increased the capture of fine sediments by the bay from the San Diego River due to storm flow spill through from the river to the Mission Bay channel. From 1997 to 2007, the bottom of Quivira Basin was identified as the most significant deposition area outside of the Rose Creek delta area. Also in the 1980s, the City implemented the Sail Bay Improvements project that removed private improvements from public lands around the margin of Sail Bay and expanded the usable beach with sand dredged from borrow pits located in central Sail Bay. This dredging was completed in 1985-1986. Eelgrass impacts associated with the beach widening were mitigated by restoration planting of the new beach constructed outward at a shallow slope of 15:1. The nearly 12 acre fill of the bay associated with the beach widening was mitigated by the construction of the South Shores Embayment south of South Pacific Channel and east of Sea World. This was completed in 1994 (Figure 2).

Significant changes in erosion and sedimentation dynamics occurred with the dredging of Fisherman's Channel and replacement of the tight pile supported bridge with a broader span concrete bridge in the late 1980s and the subsequent replacement of the southerly Ingraham Street Bridge with a new broad span concrete bridge. These changes substantially opened up the bay to enhanced circulation improving water quality, but also altering erosion and shoaling patterns due to increased water velocities. Some of the most notable shoaling after bridge construction was seen within the Mission Bay Channel shoals to the west of the new bridge. This shoal was ultimately dredged out as part of the Mission Bay shoreline stabilization project in 1995. Other dredging activities completed in Mission Bay Park include dredging to reconnect the Sea World Dolphin Lagoon back to the Bay in 1991, dredging in 1995 to remove the overwash shoal that had been East Ski Island, dredging and upland earthwork to construct the Crown Point Shores Intertidal Mitigation Areas (now Stribley Marsh), reconfiguration and





**Figure 2.** Recent dredging project history in Mission Bay

dredging at West Ski Island in 2000, and recent federal channel maintenance dredging by the Corps of Engineers in 2010-2011.

Mission Bay is currently dynamic low-flux sedimentary environment with sediment transport dominated by tidal and wave action. The main inputs of sediments into the bay are littoral sands entering the bay via the Mission Bay entrance channel, fluvial inputs from Rose Creek and Tecolote Creek as well as the San Diego River, and bay beach erosion resulting from wind, wave, and oceanic swell erosion. Other minor inputs include urban storm drains and atmospheric particulates. The main sediment outputs from the bay include tidal export out of the entrance channel, dredging, and shoal or beach reclamation activities. Patterns of accretion and erosion within Mission Bay are defined by a combination of geography and sediment sources, sediment characteristics, and bay hydrodynamics.

In 2007 a review of Mission Bay bathymetry and sediment dynamics was completed. The 2007 bathymetry survey determined that an estimated 483,880 cubic yards of sediment has accreted in Mission Bay in the ten year period between 1997 and 2007. While sediment has not been deposited evenly throughout the Bay, this volume constitutes an approximate 0.16 inch/year accretion rate over the 2,299-acre Bay. After reviewing all existing data the City determined that there was a need for an updated baywide eelgrass survey also collecting bathymetric data. As a result a survey was conducted in 2013 that collected bathymetric data (Figure 3) concurrent with baywide eelgrass distribution data (Figure 4). Following the processing of eelgrass survey data the new 2013 survey results were combined

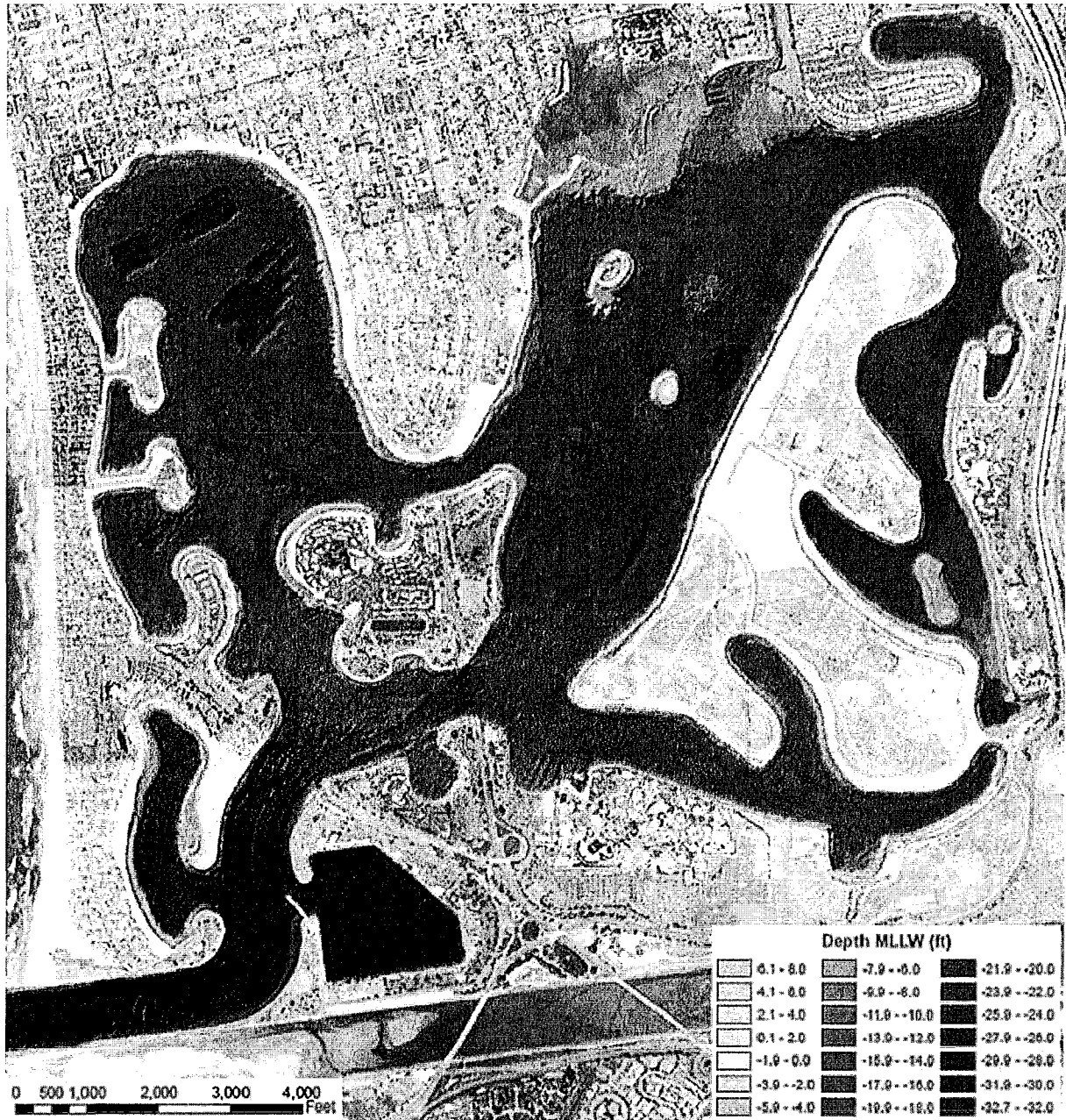


Figure 3. Mission Bay 2013 Condition Bathymetry



**Figure 4.** Mission Bay Eelgrass Distribution 2013

with prior baywide survey data from surveys conducted in 1988, 1992, 1997, 2003, and 2007 to develop an eelgrass frequency of occurrence map adds the individual survey layers and divides the resulting grid based map by the total number of surveys (Figure 5). This map provides a good indication of the relative stability of eelgrass presence in differing areas of the Bay, but it does not provide information on the extent of vegetated coverage within the areas mapped as eelgrass. As a result the mapping does not

fully present the difference between dense and sparse eelgrass present as a gradient from the west to the east in the bay.



Figure 5. Mission Bay Eelgrass Distribution Frequency of Occurrence 1988-2013

Overlain on the physical environment and eelgrass resources are existing bay navigation areas, speed zones, and water uses that differ as a function of designated land uses and physical barriers to navigation on the bay. Figure 6 identifies major navigational zones on the Bay and other important water use features over a color coded elevation map that illustrates bay depths in a

depth bins showing shallower waters in reds, moderate depths in oranges and yellows and deeper waters in shades of blue.

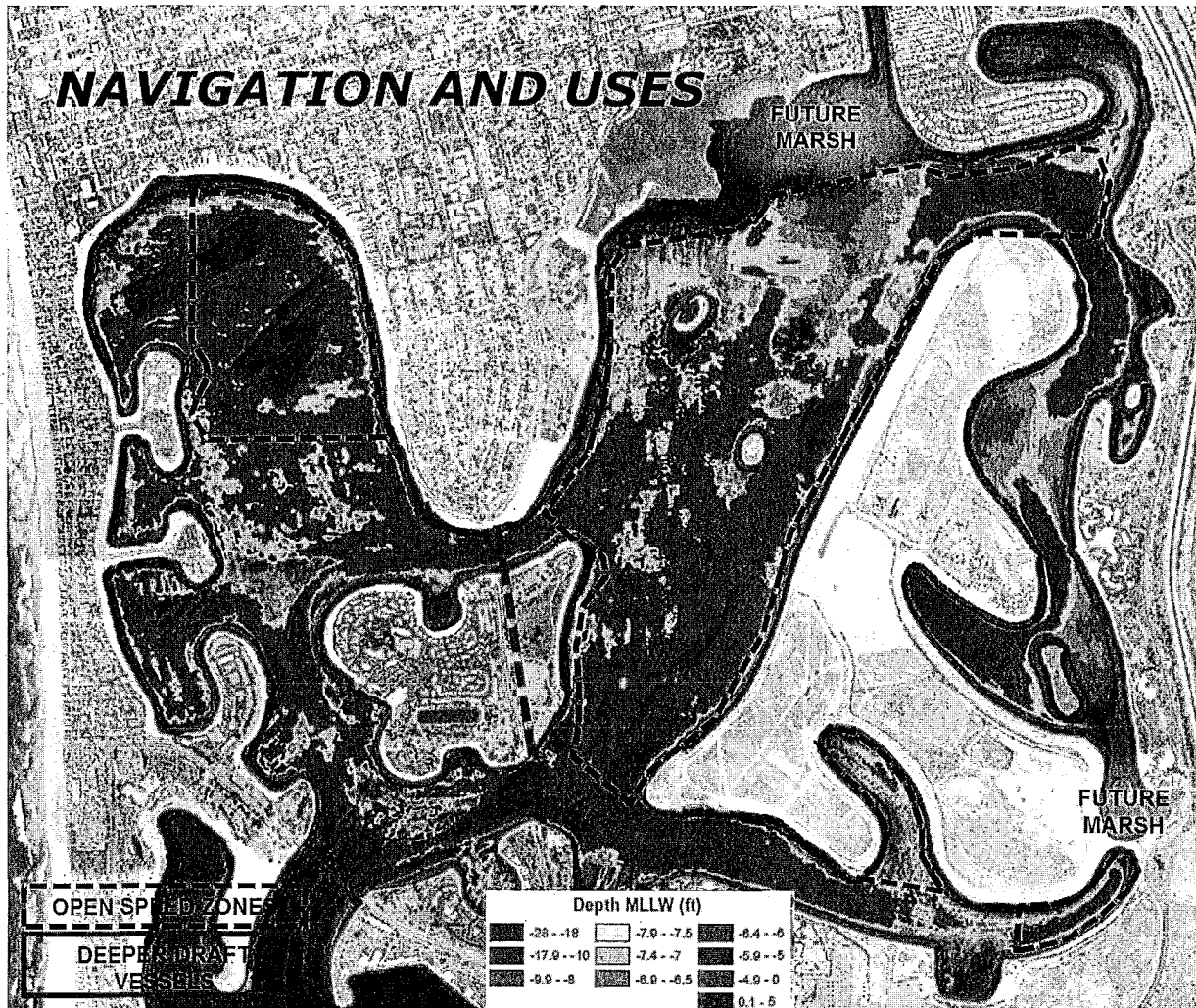


Figure 6. Mission Bay Navigation and Water Uses

Very deep draft vessels are generally restricted by water depths and bridge clearance to areas to the west of the Glenn Rick Bridge supporting West Mission Bay Drive. Deeper waters within Mariner’s Basin, Quivira Basin and the entrance channel accommodate larger vessels (Figure 6). Clearance limits under the bridges also restrict sailing vessels with high masts. Between the West Mission Bay Drive Bridge and the Ingraham Street bridges, waters are generally navigable by larger sport vessels, two medium sized dinner cruise barges outfitted a 19<sup>th</sup> century stern paddlewheel river boats (Bahia Belle and larger William D. Evans), and smaller recreational vessels. The vessels

on the west side of the Ingraham Street bridges generally have deeper drafts than vessels on the east side of the bridges, however speeds are restricted to 5 miles per hour over most of the west side of the bay (Figure 6). Open speed areas are located in northwestern Sail Bay and throughout most of Fiesta Bay. Controlled waters restricted for personal water crafts (PWC) and competition ski boats are found at the east end of South Pacific Passage, while waters to the east of Fiesta Island are generally used most heavily by non-motorized crafts and smaller crafts such as PWCs. Small bay fishing boats often fish the currents through the bridges during changing tides.

## PROJECT OVERVIEW

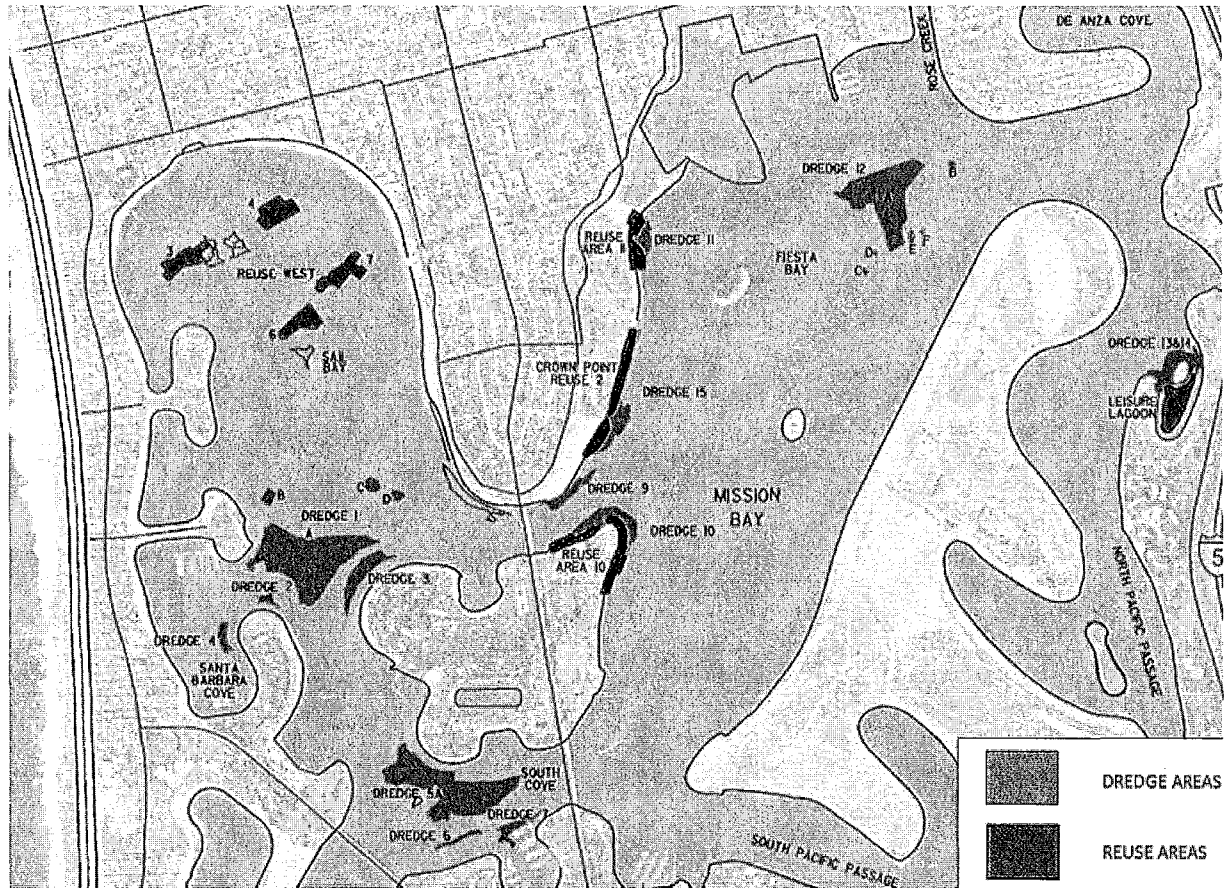
### Project Purpose

Bay depth range maps, water uses and speed zones, incident reports and response call history, as well as individual experience with vessel groundings and safety zone adjustments that have been required allowed the City Lifeguard Services to identify areas of the bay that posed navigational safety hazards. Not all areas of the same depth were considered to be of equal concern. Controlled or low speed areas or areas only navigated by shallow draft vessels could support shallower waters than areas in open speed zones or where deeper draft vessels may ground on shoals. As a result, the identification of navigational safety concerns focused on true safety concerns and not on all areas exhibiting some shoaling.

Using the tools available, multiple potential navigation safety areas were identified. Consideration was given to current and future water use plans under the Mission Bay Master Plan. As a result, some areas that have shoaled in to the point of regular low tide vessel groundings such as at the mouth of Rose Creek and Tecolote Creeks have been omitted from consideration for dredging as the master plan calls for a change in the water uses in these areas that would result in restoration of marshlands. As a result, dredging these areas down would be counterproductive to the proximate implementation of the adopted Mission Bay Master Plan.

In total, Lifeguard Services working with the Public Works project team identified a total of 15 areas required to be addressed for navigational safety concerns. These were identified as Dredge Area 1-15 with some areas supporting multiple small satellite dredge areas (Figure 7). Subsequent work resulted in a determination that only 14 of these sites were actually maintenance dredging sites that would result in returning the bay condition to that of the baseline chart. Dredge Area 8, located on the southwest portion of Crown Point along Riviera Shores and not labeled on Figure 7 was determined to not be an infill shoal into the bay from baseline conditions, but rather this site reflects an erosion of the upper beach back towards Crown Point and the pedestrian walkway. As a result, cutting this areas down to remove the shallow hazard would not be maintenance dredging, but rather a modification to the originally constructed bay shoreline. Further, it is unlikely that this

area can be sustained if built back up with existing native beach sand alone. As a result, this site warrants greater consideration and treatment as a shoreline stabilization project. It has been removed from the current project due to the fact that it does not meet project definition.



The results of these recent surveys indicate twelve primary areas within the bay that currently

**Figure 7.** Mission Bay Navigational Safety Dredging Project Areas and Water Uses

The proposed project is considered to be principally a major maintenance project that integrates mitigation into the project design as a reuse of dredged materials. It is independent of any other projects contemplated in Mission Bay Park and would not hamper or facilitate future projects as the work does not result in material changes to land forms, does not extend any utilities or construct any structures, and does not alter or enhance any land uses or zoning conditions. The proposed work does not alter existing water or beach uses, rather it seeks only to improve safety of existing uses undertaken in Mission Bay.



**Project Dredge and Fills**

Maintenance dredging at the identified locations would eliminate hazards improving safety along shorelines and in open navigation zones of the Bay. It is anticipated that between 122,000 and 220,850 cubic yards of sediment would be dredged. The broad range in volumes is based on allowable overdepth dredging in generally very shallow dredge cuts. Table 1 summarizes the dredging by individual dredge areas and includes the area, volume of cut, and lower design elevation of the final dredged area. In addition, the table identifies the extent of eelgrass impact anticipated to occur at each dredge area. The extent of dredging and volumes of dredge material generated are derived from the Mission Bay Navigational Safety Dredging project plans (Rick Engineering Company 2016).

**Table 1. Dredge Area Summary.**

LOCATION	AREA (ACRES)	DREDGE ELEV. (FT NGVD29/MLLW)	CUT VOL (CY)	FILL VOLUME (CY)	1-FT OVERDREDGE (CY)	2-FT OVERDREDGE (CY)	EELGRASS IMPACT (ACRES)
<b>DREDGE AREA</b>							
DREDGE 1A	15.87	-10.5' NGVD /-8.1' MLLW	22,690	-	25,600	-	15.87
DREDGE 1B	0.52	-10.5' NGVD /-8.1' MLLW	590	-	840	-	0.52
DREDGE 1C	0.63	-10.5' NGVD /-8.1' MLLW	720	-	1,020	-	0.63
DREDGE 1D	0.41	-10.5' NGVD /-8.1' MLLW	500	-	660	-	0.41
DREDGE 2	0.41	-10.5' NGVD /-8.1' MLLW	470	-	660	-	0.41
DREDGE 3	2.84	-10.5' NGVD /-8.1' MLLW	5,450	-	4,580	-	2.57
DREDGE 4	0.8	-10.5' NGVD /-8.1' MLLW	610	-	1,290	-	0.64
DREDGE 5A	13.5	-10.5' NGVD /-8.1' MLLW	19,850	-	21,780	-	13.30
DREDGE 5B	NO WORK	NO WORK	NO WORK	-	NO WORK	NO WORK	NO WORK
DREDGE 6	0.67	-10.5' NGVD /-8.1' MLLW	850	-	1,080	-	0.42
DREDGE 7	1.3	-10.5' NGVD /-8.1' MLLW	3,380	-	2,100	-	1.30
DREDGE 8	NO WORK	NO WORK	NO WORK	-	NO WORK	NO WORK	NO WORK
DREDGE 9	1.94	-10	4,770	-	-	-	0.97
DREDGE 10	3.61	-10.5' NGVD /-8.1' MLLW	15,300	8,780	-	-	2.01
DREDGE 11	1.67	-7.0' NGVD /-4.6' MLLW	5,900	5,900	-	-	0.64
DREDGE 12A	11.44	-10.5' NGVD /-8.1' MLLW	22,890	-	-	36,930	0.99
DREDGE 12B	0.13	-10.5' NGVD /-8.1' MLLW	230	-	-	410	0.00
DREDGE 12C	0.11	-10.5' NGVD /-8.1' MLLW	190	-	-	350	0.06
DREDGE 12D	0.07	-10.5' NGVD /-8.1' MLLW	120	-	-	210	0.04
DREDGE 12 E	0.21	-10.5' NGVD /-8.1' MLLW	380	-	-	680	0.04
DREDGE 12F	0.08	-10.5' NGVD /-8.1' MLLW	140	-	-	260	0.00
DREDGE 13 & 14	3.78	-5.0' NGVD /-2.6' MLLW	8,320	8,320	-	-	0.78
DREDGE 15	3.37	-7.0' NGVD /-4.6' MLLW	9,050	9,050	-	-	1.31
<b>TOTAL DREDGE</b>	<b>63.36</b>		<b>122,400</b>	<b>32,050</b>	<b>59,610</b>	<b>38,840</b>	<b>42.93</b>

Dredged material is to be fully reused in the development of eelgrass mitigation areas to offset project impacts and to repair short segments of three beaches that have eroded into the shoals to be dredged. Table 2 outlines the proposed sediment reuse by site as identified in Figure 7. The fill volumes in these reuse areas has been calculated as the maximum volume generated by the project

assuming that full allocated over depth is achieved by the Contractor to ensure that minimum navigation clearances are met. The sediments to be dredged have been determined to be chemically and physically suited to the proposed restoration reuse through collection and testing under the EPA/ACOE-approved SAP (M&A 2015 a and 2015b). The testing program conducted consistent with the Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. (Inland Testing Manual [ITM]) (USEPA/USACE 1998), demonstrated the material to be of similar physical and chemical condition to the sediments native to the reuse sites.

**Table 2.** Reuse Area Summary.

BENEFICIAL RESUE EELGRASS MITIGATION SITE MITIGATION SITE	AREA (ACRES)	FILL ELEV. (FT NGVD29/MLLW)	FILL VOL (CY)
<b>RESUSE SITES</b>			
RESUSE WEST 3 **	2.51	-10.5' NGVD /-8.1' MLLW	41,270
RESUSE WEST 4 **	2.69	-10.5' NGVD /-8.1' MLLW	50,060
RESUSE WEST 6 **	2.23	-10.5' NGVD /-8.1' MLLW	48,690
RESUSE WEST 7 **	2.50	-10.5' NGVD /-8.1' MLLW	48,780
CROWN POINT REUSE 2	3.35	BEACH	9,050
REUSE AREA 10	3.75	BEACH	8,780
LEISURE LAGOON	2.45	-7.5' NGVD /-5.1' MLLW	8,320
REUSE AREA 11	2.06	BEACH	5,900
<b>TOTAL REUSE</b>	<b>19.47</b>		<b>220,850</b>
**FILL VOLUME INCLUDES DREDGING CUT VOLUME AND 1-FT AND 2-FT OVER DREDGING VOLUMES			

Reuse areas are not proposed to impact eelgrass and will be adjusted spatially as necessary to ensure eelgrass impact avoidance or minimization at the time of construction. Because eelgrass impacts as defined under the CEMP are to be determined through pre-dredging and post-dredging surveys and eelgrass varies somewhat in distribution, it is recognized that some adjustments may be required in the final fill positioning for the reuse areas to best serve their intended mitigation function. In addition, the final fill volumes cannot be known at this time since it is dependent upon the extent of overdredge conducted. This will be accommodated by shifts in fill location, lowering fill elevations, or slight footprint expansions to best meet mitigation needs. In no instance will the reuse areas expand beyond the existing borrow pit boundaries or above the specified elevations.

**Project Eelgrass Restoration**

As discussed later in this document, the project will result in significant impacts to eelgrass unless mitigated. To accomplish required mitigation, the project has been designed to dredge in a manner that sustains restoration within the dredged areas and to construct suitable planting sites within the subtidal reuse sites. Upon completion of individual sites, planting of the sites with eelgrass will be accomplished commencing upon the beginning of the high growth season in March. Because

eelgrass restoration is principally a mitigation measure, it is only briefly discussed here and described in more detail within the eelgrass mitigation plan.

### **Project Timing**

Project activities are principally considered to be short-term dredging and fill placement is anticipated to be completed over a 5 month period from November through March. Planting of eelgrass would be conducted over a longer period of time but would be much reduced in scale and presence within the Bay. Planting work would be completed from March through September following completion of dredging and reuse site construction with some overlap between the two activities. Upon completion of initial dredging and placement work, visual changes in the bay are expected to be negligible since the majority of the work is subtidal and not visible or perceptible to most bay visitors.

## **METHODS AND SURVEY LIMITATIONS**

### **Literature and Data Review**

Historical and currently available literature and data pertaining to the project area were reviewed prior to initiation of the field investigation. This review included examination of: 1) aerial photography for the bay including those dating back to the late 1920s and progressing through bay construction phases as well as recent photographic histories from custom flights in the 1980s and photographs from 1994 to the present available through on-line photographic databases such as Google Earth and Microsoft Corporation; 2) regional vegetation data for the project vicinity (SanGIS 1995 and 2012); 3) geological substrates and soil types mapped on the project site (USGS 2005 and SanGIS 2002, respectively); 4) federally designated critical habitat for the project vicinity (USFWS 2014a); and 5) California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) and U.S. Fish and Wildlife Service (USFWS) special status species records for the project vicinity (CDFW 2014 and USFWS 2014b, respectively). In addition, M&A reviewed the mapping of eelgrass and bathymetric conditions from 1988 through present including six comprehensive eelgrass surveys of the Bay over the past 28 years.

### **Survey Date(s), Time(s), and Conditions**

Field surveys of the sites have been extensive and have included marine resource surveys and mapping, sediment characterization sampling, upland habitat assessment and jurisdictional waters determinations. Surveys have included general biological survey to map vegetation and identify botanical and wildlife species, as well as a marine habitat survey that included eelgrass (*Zostera marina*) mapping. Table 3 summarizes the survey dates, times, and conditions.

**Table 3. Survey Date(s), Time(s), and Conditions**

Survey	Date	Time	Conditions (start to end) <sup>1</sup>	Staff
Marine Habitat	Apr 24, 2013	0630-1800	NA	Jordan Volker Shelley Petrucci
Marine Habitat	Apr 28, 2013	0630-1800	NA	Jordan Volker Shelley Petrucci
Marine Habitat	Apr 30, 2013	0630-1800	NA	Jordan Volker Shelley Petrucci
Marine Habitat	Mar. 20, 2015	0630-1800	NA	Jordan Volker Tommy Valencia
Sediment Sampling General Biology	Mar. 19, 2015	0713-1630	NA	Lawrence Honma Mary Tamburro Tommy Valencia Brandon Stidum Brian Riley
Sediment Sampling	Mar. 20, 2015	0630-1800	NA	Mary Tamburro Tommy Valencia Brandon Stidum
Sediment Sampling	Mar. 25, 2015	0700-1700	NA	Mary Tamburro Tommy Valencia Brandon Stidum
Sediment Sampling/ Marine Resources	Apr. 22, 2015	0720-1830	NA	Mary Tamburro Tommy Valencia Brandon Stidum Brian Riley Jordan Volker
Sediment Sampling	May 7, 2015	0640-1600	NA	Mary Tamburro Tommy Valencia Brandon Stidum
General Biology	Apr. 1, 2015	0915-1030	Weather: 20%-15% cc Wind: 0-1 BS Temperature: ~57° F	Brandon Stidum
Marine Resources	Sep. 23, 2016	0730-1520	Weather: 0% cc Wind: 0-1 BS Temperature: ~73° F	Jordan Volker Daniel Kahl
Marine Resources	Oct. 15, 2016	0900-1640	Wind: 0-1 BS Temperature: ~70° F	Jordan Volker Kelsie Burlingame
General Biology	Aug. 9, 2016	0800-0925	Weather: 0% cc Wind: 0-1 BS Temperature: ~62° F	Keith Merkel
General Biology	Nov. 18 2015	1300-1650	Weather: clear Wind: 0-2 BS Temperature: ~62° F	Keith Merkel

<sup>1</sup> cc = cloud cover; BS = Beaufort scale; °F = degrees Fahrenheit

## **Field Survey Methods**

### ***General Biology: Vegetation Mapping and Botanical/Wildlife Survey***

M&A conducted a general biological survey of the study area on multiple occasions with the primary focus being on the low intertidal environments and upper tide lines. A focused investigation was made at the proposed South Shores contractor staging area to document vegetation on the site and confirm accessibility from the paved lot to the pad and out to the waters edge. During this investigation, boundaries of disturbed sage scrub vegetation were noted in order to align the contractor yard to stay outside of sage scrub and within disturbed lands. The survey was conducted on foot and included the entire project area.

Existing habitat types were classified according to the Holland (1986) code classification system as modified by Oberbauer et al. (2008), and have been mapped in accordance with the City Biological Guidelines and Guidelines for Conducting Biological Surveys (2012).

The scientific and common names utilized for the floral and faunal resources were noted according to the following nomenclature: flora, Baldwin (2011); butterflies, Klein and San Diego Natural History Museum (2002) and Opler et al. (2010); amphibians and reptiles, Crother et al. (2012); birds, American Ornithologists' Union (1998 and 2014); and mammals, (species level) Wilson and Reeder (2005) and (sub-species level) Hall (1981).

Photographs of the project area were taken to record the biological resources present within the study area (M&A 2016), and data collected from the survey were digitized in Environmental Systems Research Institute (ESRI) Geographical Information System (GIS) software, using ArcGIS® for Desktop.

### ***Marine Habitats and Eelgrass Survey***

Intertidal marine habitats were surveyed from shore in conjunction with the general biological survey described above as well as by survey vessel with interferometric sidescan sonar and ROV. In addition, an in-water eelgrass survey was completed of the site by SCUBA diver.

Eelgrass habitat mapping was completed using interferometric sidescan sonar, which provided an image of seafloor backscatter within the entire project area. Interpretation of the backscatter data allowed for an assessment of the distribution of eelgrass. Sidescan backscatter data were acquired at a frequency of 468 kHz, with a scanning range of 31 meters for both the starboard and port channels, resulting in a 62 meter wide swath. All data were collected in latitude and longitude using the North American Datum of 1983 (NAD 83). The survey was conducted by running transects

spaced to allow for overlap between adjoining sidescan swaths. Transect surveys were performed until the entirety of the survey area was captured in the survey record. Following completion of the survey, the data were converted into a geographically registered mosaic through digital post-processing, and plotted on a geo-rectified aerial image of the project area. Marine resources of interest were then digitized to show their distribution within the survey area.

### ***Directed Sensitive Species Survey/Assessment***

Concurrent with the habitat mapping and botanical/wildlife survey, a directed survey/assessment for special status species, as defined under CEQA, was conducted within the study area. Only the South Shores staging area supported any terrestrial vegetation within work areas and as such, this area was the focus for the rare species investigations. Further, during each field visit, note was made of the absence of marine mammals within or in proximity to the project sites.

State CEQA Guidelines §15380 (Title 14, Chapter 3, Article 20) define “endangered, rare or threatened species” as “species or subspecies of animal or plant or variety of plant” listed under the Code of Federal Regulations, Title 50, Part 17.11 or 17.12 (Volume 1, Chapter I) or California Code of Regulations, Title 14, Sections 670.2 or 670.5 (Division 1, Subdivision 3, Chapter 3), or a species not included in the above listings but that can be shown to be “endangered” meaning “when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors” or “rare” meaning “although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered ‘threatened’ as that term is used in the Federal Endangered Species Act”. State CEQA guidelines Appendix G, Section IV generally refers to species that fall under the above criteria as “special status species”.

Thus, for the purposes of this report, special status species are: 1) federally and state listed species (CDFW 2015c and 2015d); 2) CDFW Species of Special Concern (SSC), Fully Protected (FP), and Watch List (WL) species (CDFW 2015a and 2015b); 3) species designated as Special Plants or Special Animals in the CNDDDB, which include all taxa inventoried by the CDFW, regardless of their legal or protection status; and 4) MSCP Narrow Endemic and Covered Species (City 1997).

The potential for sensitive species to occur on the project site was assessed based on the presence of potentially suitable habitat, as well as historical and currently available species data.

### ***Eelgrass Impact Analysis***

Results from the baseline eelgrass survey were used to determine the footprint of project impact to eelgrass based on the limits of grading as determined in the Rick Engineering Company project plans (2016). Impact calculations for eelgrass were made by Rick Engineering Company from data provided by M&A from the 2013 baywide eelgrass survey. This baseline survey provides an estimate of the eelgrass impact anticipated from the project. Final impact determinations will be made by comparison of the pre-dredging and post-dredging eelgrass surveys as outlined in the provisions of the CEMP.

### ***Survey Limitations***

Biological inventories are generally subject to various survey limitations. Depending on the season and time of day during which field surveys are conducted, some species may not be detected due to temporal species variability. One biological survey was conducted during morning hours of the early spring season; therefore, some species of annual plants, invertebrates, amphibians, reptiles, migratory or nesting birds, and nocturnal wildlife may not have been detected. Based on the biological literature and data review performed, as well as knowledge of species-specific habitat requirements, it is anticipated that any additional species potentially present on the project site can be fairly accurately predicted, and that the survey conducted was sufficient in obtaining a thorough review of the biological resources present on the project site.

Because of the nature of the project and extensive visits made to the project sites, it is not anticipated that any sensitive species or resources were missed in the completion of the field work.

## **SURVEY RESULTS**

### **Physical Characteristics**

The project sites are located in waters and on groomed beaches of Mission Bay. Staging is proposed on a disturbed pad above a revetment shoreline along the bay. Other than the contractor staging area, all of work sites are located within waters of the U.S. Intertidal beach reuse areas will transition into existing supratidal beaches without altering existing upland environments at these sites. At all beach reuse sites, the uplands consist of developed parklands supporting manicured turf grass. No turf grass is proposed to be removed, rather the replaced material will meet with existing sand near the high tide line.

The elevation within the study area ranges from -22.4 feet NAVD29 (-20 feet MLLW) within the deepest borrow site in Sail Bay to just above the highest high tide line. Soils within the study area

are mapped as “Made Land” as the area was created from material dredged to create Mission Bay as it currently exists. The project areas are not located within the City’s MHPA preserve, but the project is within the coastal overlay zone.

**Biological Resources - Terrestrial**

***Terrestrial Habitats***

Terrestrial habitat types identified within the project area during the biological survey are urban developed lands (Table 4). At the contractor staging area, these lands include upper portions of revetted shoreline above the highest high tide, concrete trails, and escaped landscape plants consisting of statice (*Limonium perezii*), hottentot-fig (*Carpobrotus edulis*), crown daisy (*Chrysanthemum coronarium*) interspersed with scattered opportunistic species of tree tobacco (*Nicotiana glauca*), telegraph weed (*Heterothica grandiflora*), and coyote bush (*Baccharis pilularis*). Above other beach reuse areas, urban/developed lands consist of turfing parklands and concrete trails transitioning to the groomed sand beach.

**Table 4. Terrestrial Habitats/Vegetation Communities**

Habitat/Vegetation Community	Holland/Oberbauer Code	MSCP Tier; Habitat Type	Existing (acres)	City of San Diego Inside MHPA	City of San Diego Outside MHPA
Urban/Developed –	12000	IV	1.55	0	1.55
<b>Total:</b>			<b>1.55</b>	<b>0</b>	<b>1.55</b>

Urban/Developed – (Oberbauer 12000)

At the contractor staging area, these lands include upper portions of revetted shoreline above the highest high tide, concrete trails, and escaped landscape plants consisting of statice (*Limonium perezii*), hottentot-fig (*Carpobrotus edulis*), crown daisy (*Chrysanthemum coronarium*) interspersed with scattered opportunistic species of tree tobacco (*Nicotiana glauca*), telegraph weed (*Heterothica grandiflora*), and coyote bush (*Baccharis pilularis*). Above other beach reuse areas, urban/developed lands consist of turfing parklands and concrete trails transitioning to the groomed sand beach.

***Terrestrial Zoological Resources-Fauna***

Wildlife species noted during the biological survey consisted primarily of common urban associated species as well as species commonly found in nearshore coastal bay environments. Avian species



observed included European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), Anna’s hummingbird (*Calypte anna*) and rock pigeon (*Columba livia*).

***Terrestrial Rare, Threatened, Endangered, Endemic and/or Sensitive Species or MSCP-Covered Species***

No terrestrial special status species were identified within the study area. The project site has limited potential to be utilized by foraging sensitive species during various times of the year; however, these species are typically associated with marine environments. Marine associated birds are discussed in the marine resources section below.

**Biological Resources - Marine**

***Marine Habitats and Zoological Resources***

Three marine habitats occur within the study area (Table 5). A narrow, groomed supratidal and intertidal sand beach runs around the shoreline of the bay, transitioning into shallow bay waters, and dense eelgrass beds offshore. The eelgrass beds were mapped in 2013 for this effort (Figure 4). The following text describes marine habitats in detail.

**Table 5. Marine Habitats/Vegetation Communities**

Habitat/Vegetation Community	Holland/Oberbauer Code	MSCP Tier; Habitat Type	Existing (acres)	City of San Diego Inside MHPA	City of San Diego Outside MHPA
Beach	64400	NA	3.12	0	3.12
Shallow Bay - Eelgrass	64123	NA	42.93	0	42.93
Shallow Bay - Unvegetated	64123	NA	29.68	0	29.68
<b>Total:</b>			<b>75.73</b>	<b>0</b>	<b>75.73</b>

**Beach (Oberbauer 64400)**

A narrow band of sand beach occurs around the shoreline of Mission Bay. The beach is almost always bounded by manicured turf and walking paths. This habitat is heavily utilized for recreational purposes by visitors to Mission Bay. The lower portions of the beach are intertidal habitat providing loafing and foraging area for shorebirds and gulls; however, human disturbance along the shoreline prevents extensive use of this habitat by disturbance sensitive birds in most

areas of the bay. Avian species observed along the sand beach and in shallow bay waters included western gull (*Larus occidentalis*) and California gull (*Larus californicus*) and waterfowl including surf scoter (*Melanitta perspicillata*).

The upper portion of the beach is supratidal recreational beach. This area occurs above the highest high tides and transitions to turf and trail improvements of Mission Bay Park. Typically, this area is distinguished from the intertidal beach by an erosion scarp established by the action of the waves at the scarp toe. The base of the scarp typically shows shoreline erosion at approximately mean sea level as a result of water spending the greatest amount of time oscillating around this tidal stage.

#### Shallow Bay - Eelgrass (Oberbauer 64123)

Results of the baseline eelgrass survey completed in spring 2013 indicate wide distribution of eelgrass within Mission Bay (Figure 3). Within Mission Bay, the survey documented the presence of 979.1 acres of eelgrass in 2013 (Merkel & Associates 2013).

Eelgrass vegetated habitats are an essential component of southern California's coastal marine environment. Eelgrass beds function as important habitat for a variety of invertebrate, fish, and avian species.

For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. Typical eelgrass associates include pipefish (*Syngnathus* spp.), kelpfish (Family Clinidae), and surfperch (Family Embiotocidae), as well as schooling fish such as topsmelt (*Atherinops affinis*) and anchovy (*Anchoa* spp.).



*Eelgrass (Zostera marina) in habitat typically found in shallow waters of Mission Bay*

#### Shallow Bay - Unvegetated (Oberbauer 64123)

Shallow bay habitat is described by Oberbauer et al. (2008) as having a depth shallow enough for light to penetrate to the seafloor. This habitat within Mission Bay is typically comprised of fine sands and mud, and contains patches of red algae (*Gracilaria* spp., *Ceramium* spp.) and green algae (*Ulva* spp.). Typical invertebrate species include burrowing bivalves (*Chione* spp., *Macoma nasuta*), the amphipod, *Grandidierella japonica*, and bay ghost shrimp (*Callinassa californiensis*). Other invertebrates found in this habitat include the invasive Japanese mussel (*Musculista senhousia*), the opisthobranch, *Navanax inermis*, and California sea hare (*Aplysia californica*). Common fish species include round stingray (*Urobatis halleri*), gobies (Family Gobiidae), barred sand bass (*Paralabrax*

*nebulifer*), and bottom dwelling diamond turbot (*Hypsopsetta guttulata*) and California halibut (*Paralichthys californicus*).

The shallow bay habitat within the project area that does not contain eelgrass ranges from mud to sand and extends into the borrow pits in Sail Bay and throughout shallower waters within the east basin at the Rose Creek shoal at Dredge Area 12 and within Leisure Lagoon at the far eastern side of the bay.

**Marine Rare, Threatened, Endangered, Endemic and/or Sensitive Species or MSCP-Covered Species**

Species identified as protected, rare, sensitive, threatened or endangered by the USFWS, National NMFS, or CDFW that may be expected in the project area at various times include three bird species, and two marine mammals (Table 6). All of these are marine species, and none were observed during the current survey effort. California brown pelican (*Pelecanus occidentalis californicus*) and double crested cormorant (*Phalacrocorax auritus*) are protected at nesting locations and communal roosts, neither of which is present within the project area. Individual brown pelican and double crested cormorant occasionally forage within the nearshore waters or loaf on sand beaches adjacent to the bay. However, these species are opportunistic in their loafing and foraging activities are not dependent upon the project area for essential biological activities. Further the project areas generally lack high utility for these species which tend to aggregate on the rock breakwaters near Quivira Basin and are much less common elsewhere in the bay. California least terns (*Sternula antillarum browni*) do forage within the project area during summer months. The nearest least tern nesting colonies to project dredging areas are located at Mariner’s Point, and the FAA Island approximately 0.45 and 0.36 miles from the nearest dredging areas. This species makes opportunistic use of the bay shallows to forage for small fish.

**Table 6. Special Status Species Observed or Expected to Occur within the Study Area**

Common Name	Scientific Name	Status	Occurrence at Project Site
California Brown Pelican	<i>Pelecanus occidentalis californicus</i>	CDFG FP	Uncommon
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	CDFG WL	Uncommon
California Least Tern	<i>Sternula antillarum browni</i>	SE, FE	Regular seasonal
Harbor Seal	<i>Phoca vitulina</i>	MMPA	Uncommon
California Sea Lion	<i>Zalophus californianus</i>	MMPA	Uncommon

**SE** – State Endangered; **FE**- Federally Endangered; **FT** – Federally Threatened; **CDFW SSC**- CDFW Species of Special Concern; **CDFW-FP** – CDFW Fully Protected Species; **CDFW-WL**- CDFW Watch List; **MMPA** – species protected by the Marine Mammal Protection Act

\*Least terns are a migratory species found in the area from after April 1 through prior to September 1 of each year.

Other special status species that have a low to moderate potential to occur on the study area, based on the presence of suitable habitat, include marine mammals, specifically California sea lion (*Zalophus californianus*) and harbor seal (*Phoca vitulina*). Disturbance of these species is prohibited under the Marine Mammal Protection Act (MMPA). No breeding, haul out, or loafing areas for these marine mammals occur within the project area. California sea lion and harbor seal forage throughout Mission Bay, but are mainly observed near the entrance to the bay and adjacent to fishing docks and landings (such as Quivira Basin and less commonly along Dana Landing). As such, they are considered to be uncommon visitors to the project area.

#### **Jurisdictional Wetland and Waterways**

No wetlands were identified within the project study area. Mission Bay is considered a traditionally navigable water under the Rivers & Harbors Act (R&HA) and waters of the U.S. under the Clean Water Act (CWA). Under these acts, the U.S. Army Corps of Engineers (USACE) has jurisdiction of activities within navigable waters, including placement of structures under Section 10 of the R&HA and for placement of fill into waters of the U.S under the Clean Water Act. Jurisdiction under the R&HA is defined as the mean high tide line (+2.59 ft NGVD29 [+5.01 ft MLLW]), while the jurisdiction under the CWA is the highest annual high tide (+5.37 ft NGVD29 [+7.79 ft MLLW]).

#### **Wildlife Movement and Nursery Sites**

The project sites within Mission Bay are not considered to be wildlife movement areas. While migratory birds make use of Mission Bay as part of their migration, the majority of the bird use by migratory birds is within areas around the Northern Wildlife Preserve at the north end of the bay and the Southern Wildlife Preserve in the San Diego River Flood Control Channel where animals are able to rest and forage with less harassment pressure than within the recreational areas of the bay where the project sites are centered.

Eelgrass is considered to be an important nursery habitat for several fish species and is considered to be Essential Fish Habitat (EFH) and a Habitat Area of Particular Concern (HAPC) under the Magnuson-Stevens Fisheries Conservation and Management Act, as well as a Special Aquatic Site under the Clean Water Act. While eelgrass habitat is considered to provide important nursery functions, there are no specifically unique nursery functions believed to be associated with the eelgrass to be impacted over other eelgrass habitat. This nursery function is one aspect of eelgrass

beds that lead to the determination that impacts to eelgrass habitat are significant without mitigation.

### Water Quality

#### ***Terrestrial Project Areas***

The upland contractor staging area is a low gradient pad comprised of hydraulically placed fill sand that was discharged into containment cells to construct uplands and the South Pacific Passage. This pad is generally a well-drained site that percolates precipitation rapidly into the sediment rather than running off to the bay. There are no developed sumps or stormwater conveyances present on the disturbed pad. Drainage under the unimproved site conditions does not appear to have developed any rilling or erosion features from this site. Other than precipitation, no other water sources exist within the upland staging area.

#### ***Bay and Beach Project Areas***

Mission Bay receives water from atmospheric precipitation, fluvial inputs from creeks and drains, and tidal flushing from the open coast. Within the project areas, water quality at all sites is considered to be chemically high quality under most circumstances. However, storm drainage into Leisure Lagoon can result in increasing nutrient and sediment loads temporarily lowering salinities within the lagoon, and stimulating bacterial growth. At Rose Creek, the project areas receive pulses of elevated turbidity and accumulate fine sediment from the watershed that is often associated with nutrient loading. The intermittent pulses of freshwater from Rose Creek generally results in short-term depression of water quality, however slower nutrient release from winter deposited fine sediments during spring months can add to both macrophytic and less commonly microalgal blooms in north Fiesta Bay. Sail Bay is susceptible to intermittent and irregular discharges of raw sewage due to breaks or overflows in the municipal sewer system within the bay watersheds. While these events are unpredictable, in location and size, they do occur on a semi-regular basis and lead to short-term contact recreational closures of various areas of the bay.

The beach areas within and adjacent to project activities receive storm water inputs from drains that service local watersheds. In general these watersheds are built out and relatively stabilized with respect to sediment generation. As a result pulses of water general carry limited turbidity and normal urban loads of dissolved constituents such as residential pesticides, total petroleum hydrocarbons, and metals from roadway sources such as unburned fuel, brakes, and other automobile and asphalt sources. The storm drain discharge water quality character is not expected to be different from typical urban discharge sources.

While urban pollutants discharged down the storm drains are not anticipated to be different from other discharge conditions within the urbanized environment, the effects of the storm water discharge through these culverts on beach erosion can be severe. Because the drains discharge at the upper edges of sand beaches, coincident occurrence of low tides and storm water discharge can result in substantial sand transport from the beach littoral cell to the bay where it is unrecoverable by the City's beach maintenance crews. This discharge is one of the principal sources of hazardous shoal development along Crown Point Shores at Dredge Areas 11 and 15.

## PROJECT IMPACT ANALYSIS

### Thresholds of Significance

State CEQA Guidelines §15065 (a) (Title 14, Chapter 3, Article 5) states, "A project may have a significant effect on the environment" if:

- "The project has the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory."
- "The project has possible environmental effects which are individually limited but cumulatively considerable."

The following analysis identifies potential impacts to biological resources that could result from implementation of the proposed project and addresses the significance of these impacts pursuant to CEQA, in accordance with the issues listed under CEQA Guidelines Appendix G, Section IV. In addition, the City has developed Significance Determination Thresholds (2011) and Biology Guidelines (2012a) under CEQA; therefore, mitigation measures for significant project impacts are recommended in accordance with these City guidelines, as well as the City MSCP Subarea Plan (1997).

### Impact Definitions

Project impacts are categorized pursuant to CEQA as direct, indirect, or cumulative impacts.

- CEQA Guidelines §15358 (a) (1) and (b) (Title 14, Chapter 3, Article 20) defines a “direct impact or primary effect” as “effects which are caused by the project and occur at the same time and place” and relate to a “physical change” in the environment.
- CEQA Guidelines §15358 (a) (2) and (b) (Title 14, Chapter 3, Article 20) defines an “indirect impact or secondary effect” as “effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable” and relate to a “physical change” in the environment.
- CEQA Guidelines §15355 (Title 14, Chapter 3, Article 20) defines “cumulative impacts” as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”

Direct, indirect, and cumulative impacts can be described as either permanent or temporary. Permanent impacts are defined as effects that would result in an irreversible loss of biological resources; temporary impacts can be defined as effects that could be restored, thus providing habitat and wildlife functions and values effectively equal to the functions and values that existed before the area was impacted.

#### **Project Impacts, Significance, and Recommended Mitigation**

Potential project impacts were evaluated based on examination of the proposed project plans (Rick Engineering Company 2016) within the context of the biological resources and water quality conditions documented during the field surveys, through research, and as described above. Direct impacts were determined by overlaying the project plans on the mapped vegetation communities/habitats in Autodesk software platforms. Indirect impacts were determined based on the design, intended use, and location of the proposed project elements relative to biological and water quality resources.

#### ***Terrestrial Habitats/Vegetation Communities***

The proposed project would result in direct impacts to urban/developed lands (Tier IV habitat types) as a result of contractor staging. Depending upon the selection contractor’s selected dredging equipment the contractor may disturb all or none of the 1.55 acre disturbed lands staging area at the provided site (Table 7). For the purposes of this analysis, all habitats inside of the allocated staging area have been considered to be impacted. This would include several large patches of hottentot-fig and scattered invasive and escaped ornamental species and a few opportunistic native shrubs. Impacts to urban/developed lands (Tier IV habitats) would be considered less than significant under CEQA since these habitats are not regionally considered to

have high conservation value requiring mitigation. Other minor impacts to developed lands (grass turf) may occur as equipment is tracked to the beach for access. However, as these beaches are regularly accessed through the same routes by City mechanized beach maintenance crews, no substantial impact is expected and these impacts would be considered to be less than significant, though the contractor would be required contractually to repair any improvements damage by the work conducted.

**Table 7. Terrestrial Habitats/Vegetation Communities, Impacts, and Mitigation**

<u>Habitat/Vegetation Community</u>	MSCP Tier; Habitat Type	Total in Study Area (acres)	Impacts inside MHPA (acres)	Impacts outside MHPA (acres)	Mitigation Ratio <sup>1</sup>	Mitigation Required (acres)
Urban/Developed – Ornamental Trees	Tier IV; Upland	1.55	0	1.55	0:1	0
<b>Total:</b>		<b>1.55</b>	<b>0</b>	<b>1.55</b>	<b>-</b>	<b>0</b>

<sup>1</sup>Mitigation ratios for upland habitats are based on the City’s Biology Guidelines (City 2012a).

***Marine Habitats/Vegetation Communities***

The project would also result in direct impacts to eelgrass habitat as a result of maintenance dredging to lower shoals that constitute a navigational safety hazard (Table 8). Eelgrass is considered a high value habitat afforded special consideration under state and federal regulatory programs. Project construction would result in impacts to an estimated 42.93 acres of eelgrass as a result of direct dredging impact. According to the California Eelgrass Mitigation Policy (CEMP) (NMFS 2014) that has superseded the Southern California Eelgrass Mitigation Policy (NMFS 1991, revision 11) impacts would require mitigation established mitigation ratios. For mitigation projects that are implemented concurrent with or immediately following project impacts, mitigation ratios require successful establishment of 1.2 acres of eelgrass for each acre of eelgrass lost. This 1.2:1 mitigation ratio is outlined in the CEMP along with scaled increases in mitigation for mitigation delay. While the requirements for successful implementation of eelgrass mitigation are outlined in the CEMP, the CEMP also includes a requirement for a minimum planting effort above the final mitigation need. In southern California this minimum planting effort is 1.38 acres for each acre impacted. The minimum targeted acreage is based on variable regional success rates and is intended to offset failure risks. The minimum planting rate of 1.38:1 does not alter the overall success requirement of 1.2: 1 outlined under the CEMP (NMFS 2014). Mitigation that is fully installed and functional prior to impact may be applied in compensation under the CEMP at a 1:1



ratio. Under the CEMP, final impact area is to be determined based on the completion of pre-dredging and post-dredging surveys that document the explicit impacts associated with the project.

Eelgrass impacts are considered to be significant and requiring of mitigation. A detailed mitigation plan has been prepared for the project and is referenced herein. With the implementation of the mitigation plan, impacts to eelgrass will be fully mitigated.

Unvegetated bay and beach areas are expected to be temporarily disturbed in association with the dredging project, however these areas are expected to rapidly recover following the completion of dredging. In a focused investigation conducted for NMFS, the three major southern California Ports and the Navy, benthic infauna recovered within 5 months following dredging with respect to density and biomass, but examination of community indices indicated that full recovery of community structure may have taken 17 to 24 months. Epibenthic invertebrates recovered within 29 to 35 months in terms of density and biomass (M&A 2010 and 2009). These recovery rates would indicate that even with large scale harbor deepening dredging recovery of benthic fauna may be relatively rapid with impacts being of a short-term nature. As a result, these impacts are considered to be adverse but less than significant.

**Table 8. Marine Habitats/Vegetation Communities, Impacts, and Mitigation**

<u>Habitat/Vegetation Community</u>	Total in Study Area (acres)	Impacts	Mitigation Ratio <sup>1</sup>	Mitigation Required (acres)
Beach	3.12	3.12	0:1	0
Shallow Bay - Eelgrass	42.93	42.93	1.2:1*	51.51*
Shallow Bay - Unvegetated	29.68	29.68	0:1	0
<b>Total:</b>	<b>75.73</b>	<b>75.73</b>	<b>-</b>	<b>51.51</b>

<sup>1</sup>Mitigation ratios for eelgrass habitat is based on the California Eelgrass Mitigation Policy (NMFS 2014) for mitigation implemented coincident with project impacts. Initial planting requirements for eelgrass in Southern California are 1.38:1 with a requirement that 1.2:1 be successful. Early implementation may be conducted reducing the mitigation ratio. A detailed summary of project mitigation standards is outlined in the CEMP and within the project eelgrass mitigation plan (M&A 2016).

### ***Special Status Species***

There were no sensitive species observed within the project sites during the field surveys. The project sites are expected to be seasonally used by sensitive species as identified in Table 6.

Sensitive bird species that occasionally occur in the project site are the California brown pelican, double-crested cormorant, and California least tern. As discussed above, no nesting sites or communal roosts for California brown pelican or double-crested cormorant occur within or adjacent to the project area. These two species are only occasional visitors to the project area. However, both species are fish foragers (California brown pelican forages from the air, and double-crested cormorant dives from the water). Work is expected to be short-term and localized, although mobile as work progresses. Work would affect only a small area of the bay at any given time. As a result, and based on these factors, impacts of the proposed project on California brown pelican and double-crested cormorant are not considered to be significant.

California least tern nests within Mission Bay (with the closest nesting sites being less than 0.5 miles from dredge locations). Temporary turbidity during dredging will occur locally around the dredge. However, dredging will be completed prior to the arrival of least terns and thus work would be temporally separated from tern presence. This scheduling separation will protect terns from disturbance associated with the work. Even if dredging were to occur concurrent with tern presence, the scale of turbidity around the dredge is expected to be very small due to the predominantly sandy nature of dredge material to be removed late in the project schedule. As such, only a small portion of the bay (0.9 percent) would be affected if the turbidity plume were not allowed to extend beyond 500 feet from the dredge. Under such conditions, this amount of turbid environment would similarly not be considered significant with turbidity restrictions as specified.

Harbor seals and California sea lions are observed commonly in Mission Bay adjacent to the entrance channel and near bait barges and fishing docks and landings. These mammals are less common in central and inner portions of Mission Bay and are expected to occur infrequently within the project area. There are no established haul-out, foraging, or breeding areas used by these or other marine mammals within the project area or vicinity. Dredging and material reuse would be of a short duration and low impact level with regard to increasing localized. Marine mammals would be expected to not respond to the anticipated dredging and filling activities due to slow movement of the dredge, low incident noise generation in the water, and general limited occurrence of marine mammals within proximity to the proposed dredging and filling locations.

### ***Jurisdictional Wetlands***

All of the in-water and beach work occurs within waters of the U.S. The proposed work would not reduce regulated waters of the U.S. but rather would alter slopes over portions of the shoreline within waters. The altered slope would be expected to have improved dissipative properties and be more stable against erosion than the present variable slope shorelines where beaches have eroded downward and produced scarps. Dredging activities are all being conducted in waters of the U.S. with excavation and filling occurring in the same area. While the work does affect regulated water and would require federal and state permit, the impacts are not considered to be significant as the project would not result in a loss or long-term degradation of habitat quality.

### ***Wildlife Movement and Nursery Sites***

Impacts to eelgrass habitat are described above. No other nursery or wildlife corridors occur within the project area.

### **Local Policies, Ordinances, and Adopted Plans**

The following federal/state laws/regulations and local ordinances/plans are applicable to the proposed project, and are evaluated for consistency purposes. The regulatory requirements anticipated for the proposed project are discussed following the summary of applicable regulations.

### ***Federal Regulations***

#### **Clean Water Act**

The federal Water Pollution Control Act Amendments of 1972 (33 United States Code [USC] 1251–1376), as amended by the Water Quality Act of 1987, and better known as the CWA, is the major federal legislation governing water quality. The purpose of the federal CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Waters of the United States include: 1) all navigable waters (including all waters subject to the ebb and flow of the tide); 2) all interstate waters and wetlands; 3) all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, or natural ponds; 4) all impoundments of waters mentioned above; 5) all tributaries to waters mentioned above; 6) the territorial seas; and 7) all wetlands adjacent to waters mentioned above.

Discharges of fills into waters of the United States are regulated under CWA Section 404. Section 404 provides for issuance of dredge/fill permits by the USACE. Permits typically include conditions to minimize impacts on water quality. Section 401 requires an applicant for any federal permit that

proposes an activity that may result in a discharge to waters to obtain certification from the State that the discharge will protect waters of the State. Certification is provided by the State Water Resources Control Board (SWRCB) or as delegated to the respective RWQCB. A Section 401 permit from the San Diego RWQCB would be required for the Proposed Project if a Section 404 permit is required. A CWA section 404 permit and section 401 certification will be required for this project.

#### Rivers and Harbors Appropriation Act

The Rivers and Harbors Appropriation Act of 1899 (33 USC 403), commonly known as the Rivers and Harbors Act (R&HA), prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval. Under R&H Section 10, the USACE is authorized to permit structures in navigable waters. Building or modifying wharves, piers, jetties, and other structures in or over the waters of the San Diego coastline requires USACE approval through the Section 10 permit process. A R&HA section 10 permit will be required for this project.

#### Endangered Species Act

The ESA protects plants and wildlife that are listed as endangered or threatened by the USFWS and NMFS. ESA Section 9 prohibits the taking of endangered wildlife, where taking is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, as well as removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under ESA Section 7, agencies are required to consult with the USFWS or NMFS if the agency determines that its action may affect an endangered or threatened species or its designated critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency may informally consult with the USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse. Concurrence from the USFWS and/or NMFS concludes the informal process. Without such concurrence, the federal agency formally consults to ensure full compliance with the ESA. No ESA consultation is anticipated to be required for this project.

### Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (M-SA) of 1976 was established to promote domestic and commercial fishing under sound conservation and management principles. NMFS, as a branch of the National Oceanic and Atmospheric Administration (NOAA), implements the act via eight regional fisheries management councils (FMCs). The FMCs in turn prepares and implements fishery management plans (FMPs) in accordance with local conditions. The Pacific FMC is responsible for the Pacific region, in which the Project site is located. The FMPs also establish EFH for the species they manage and require consultation with NMFS for actions that may adversely affect EFH. Consultation between the Corps of Engineers and NMFS is required under the M-SA.

### Marine Mammal Protection Act

The MMPA of 1972 prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. The USFWS and NMFS administer the MMPA. No MMPA take authorization is anticipated to be required for this project.

### Migratory Bird Treaty Act

The MBTA (16 U.S.C. 703-712) was enacted in 1918. Its purpose is to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. Under the MBTA of 1918 (16 U.S.C. section 703-712; Ch. 128; July 3, 1918; 40 Stat. 755; as amended 1936, 1956, 1960, 1968, 1969, 1974, 1978, 1986 and 1998), it is unlawful, except as permitted by the USFWS, to “take, possess, transport, sell, purchase, barter, import, or export all species of birds protected by the MBTA, as well as their feathers, parts, nests, or eggs (USFWS 2003). Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12). Birds protected by the MBTA include all birds covered by the treaties for the protection of migratory birds between the United States and Great Britain (on behalf of Canada, 1916), Mexico (1936), Japan (1972), and Russia (1976), and subsequent amendments.” The project is not expected to require any permit under the MBTA and no take under the MBTA is anticipated.

It is important to note that since the MBTA addresses migratory birds by family rather than at a lower taxonomic level, most bird species are protected by the MBTA because most taxonomic families include migratory members. In addition, “take” as defined under the federal MBTA is not synonymous with “take” as defined under the federal ESA. The MBTA definition of “take” lacks a “harm and harassment” clause comparable to “take” under the ESA; thus, the MBTA authority does not extend to activities beyond the nests, eggs, feathers, or specific bird parts (i.e., activities or

habitat modification in the vicinity of nesting birds that do not result in “take” as defined under the MBTA are not prohibited). Further, “a permit is not required to dislodge or destroy migratory bird nests that are not occupied by juveniles or eggs; however, any such destruction that results in take of any migratory bird is a violation of the MBTA (i.e., where juveniles still depend on the nest for survival) (USFWS 2003).” The project is not expected to require any permit under the MBTA and no take under the MBTA is anticipated.

### ***State Regulations***

#### **California Coastal Act**

The California Coastal Act (CCA) is intended to provide protection of the unique nature and public interest values of the state’s coastal fringe. The CCA is implemented by the California Coastal Commission (CCC). The CCA recognizes California ports and harbors as primary economic elements of the national maritime industry. Within the port, the Port administers the CCA under an adopted Master Plan and updates to the Master Plan that require concurrence from the CCC. Land and waters outside of the Port’s Master Plan are administered by the CCC or by local jurisdictions operating under adopted Local Coastal Programs that have been approved by the CCC. For the proposed work, the Port administers the Coastal Act compliance. A Coastal Development Permit is required for the proposed project.

#### **California Endangered Species Act**

The California Endangered Species Act (CESA) authorizes the California Fish and Game Commission (CDFG) to designate endangered, threatened, and rare species and to regulate the taking of these species (California Fish and Game Code [FGC] Sections 2050–2098). The CESA defines endangered species as those whose continued existence in California is jeopardized. State-listed threatened species are those not presently facing extinction, but that may become endangered in the foreseeable future. FGC Section 2080 prohibits the taking of state-listed plants and animals. The CDFW also designates fully protected or protected species as those that may not be taken or possessed without a permit from the CDFG and/or CDFW. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

When a species is both state- and federally listed, an expedited request for consistency with the USFWS biological opinion may be issued through a request for Section 2080.1 consistency determination. No permitting or consistency determination is anticipated to be required under this project.

### California Fish and Game Code

The FGC is implemented by the CFGC, as authorized by Article IV, Section 20, of the Constitution of the State of California. FGC Sections 3503, 3503.5, 3505, 3800, and 3801.6 protect all native birds, birds of prey, and nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. The CDFW is the state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people.

Sections 3503, 3503.5, and 3513 of the CFG prohibit the “take, possession, or destruction of bird nests or eggs.” Section 3503 states: “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” Section 3503.5 provides a refined and greater protection for birds-of-prey and states: “It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” The distinctions made for birds-of-prey are the inclusion of such birds themselves to the protections and the elimination of the term “needlessly” from the language of §3503. Section 3513 states: “It is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act.”

The definition of “take” under the FGC is not distinct from the definition of “take” under California Endangered Species Act (CESA) (FGC §86) and thus, activities or habitat modification in the vicinity of nesting birds that do not result in “take” as defined under the FGC/CESA are not prohibited. No take authorization is anticipated to be required under the CFGC. However, at the time of eelgrass restoration authorizations for harvest and planting of eelgrass must be obtained from the CDFW.

### ***Local Plans***

Several plans provide guidelines for land- and waterside uses within Mission Bay.

#### City of San Diego MSCP Subarea Plan

The City of San Diego MSCP identifies sensitive biological resources and biologically valuable areas within the City municipal boundaries or City-owned land in unincorporated areas to be included in the MHPA, a hard-line preserve. The MHPA delineates core biological resource areas and corridors targeted for conservation present at the time that the MSCP was adopted (i.e., 1997). The City of San Diego Biology Guidelines defines the MHPA as “areas [that] have been determined to provide

the necessary habitat quantity, quality, and connectivity to support the future viability of San Diego's unique biodiversity..." (City of San Diego, 2012, page 5). Within the MHPA, a limited amount of development is allowed within areas of lower quality habitat and/or areas that do not provide long-term viability. The Biology Guidelines provide mitigation measures for impacts inside and outside of MHPA boundaries.

#### Mission Bay Park Master Plan (and updates)

The Mission Bay Park Master Plan was adopted in 1994 and has been amended several times, most recently in 2002. The stated goal of the Master Plan "is to identify new recreational demands and chart a course for the continuing development of the Park which will sustain the diversity and quality of recreation and protect and enhance the Bay's environment for future." The Plan seeks to balance public recreation with management and stewardship of environmental resources, and operation of economically successful commercial leisure enterprises.

The Mission Bay Park Master Plan includes as an appendix the Mission Bay Park Natural Resource Management Plan, which documents the natural resources of the Park, and provides guidelines and programs for the protection, enhancement, and management of these resources. These include guidelines for development and mitigation such as methods for dredging and in-water work, buffer areas, seasonal restrictions for construction, and mitigation ratios for impacted habitats.

#### ***Regulatory Requirements for Proposed Project***

The proposed project will comply with CEMP as administered by the NMFS (NMFS 2014). In addition, the proposed project will comply with the *Caulerpa* Control Protocol (CCP), which calls for performance of a survey for *Caulerpa* prior to any bottom-disturbing activities

The project will require a Coastal Development Permit (CDP) from the CCC for re-development of the Bahia Resort Hotel and facilities within the Coastal Zone. The project will also comply with the USACE Section 404 of the Clean Water Act (CWA), and Section 10 of the Rivers and Harbors Act, and with the requirements of Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act. An EFH Assessment will be required for this project.

#### **Cumulative Impacts**

The MSCP was designed to compensate for the loss of biological resources throughout the program's region; therefore, per the City's Guidelines for Conducting Biological Surveys (2002), projects that conform to the MSCP would not result in cumulatively considerable impacts for those biological resources adequately covered by the program. The project site does not support regionally sensitive terrestrial vegetation, has been designed to avoid impacts to regionally sensitive



biological resources including migratory birds. The project would mitigate potential impacts to eelgrass resources in conformance with the City of San Diego MSCP Subarea Plan and Biology Guidelines as well as the CEMP, and the Mission Bay Park Master Plan as described below. Thus the project would not result in cumulatively significant impacts.

## MITIGATION AND MONITORING REQUIREMENTS

### Mitigation Definitions

CEQA Guidelines §15370 (Title 14, Chapter 3, Article 20) defines “mitigation” as:

- “Avoiding the impact altogether by not taking a certain action or parts of an action.”
- “Minimizing impacts by limiting the degree or magnitude of the action and its implementation.”
- “Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.”
- “Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.”
- “Compensating for the impact by replacing or providing substitute resources or environments.”

The following mitigation is recommended for the proposed project:

### ***Eelgrass***

To mitigate potential impacts to eelgrass to a less than significant level the following measures would apply:

1. The project shall conform to the requirements of the California Eelgrass Mitigation Policy (CEMP) (NMFS 2014). Through the implementation of a consistent eelgrass mitigation plan. This plan has been prepared for the project and is provided as Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project, Mission Bay, San Diego, CA (Merkel & Associates 2016).

The proposed mitigation would be expected to result in full offset of eelgrass impacts through eelgrass restoration in accordance with the CEMP. The mitigation program outlines site preparation, planting, monitoring, and success standards. It also outlines the use of City developed

eelgrass habitat as a means to reduce overall mitigation needs and ratios and to enhance the likelihood of mitigation success.

### ***Water Quality***

1. The proposed work has the potential to result in short-term increases in localized turbidity in the area of project dredging and material placement for beneficial reuse. In order to minimize the potential for adverse effects of increased turbidity measures shall be taken to control turbidity generation around the dredge to an extent of not more than 500 feet of a visible turbidity plume from the dredge. Because work is needed in areas of high current flow, it is anticipated that the local turbidity plume may elongate rather than spreading radially around the dredge or fill location. Should this occur, the contractor shall be held to a comparable plume area as a radial plume of 500 foot radius, but may measure the plume as an elongated feature using the long and short axis to calculate the area of the plume as an ellipse.
2. Should water quality limits be exceeded, the contractor shall be required to stop dredging or placing, slow the rate of work, move to a new location to work until a tidal change, or take other corrective actions to get the turbidity levels back in check.
3. The upland staging area shall be stabilized with appropriate BMPs including a stabilized entrance, silt curtains on the staging area perimeter, and fiber rolls as appropriate to the use. Upon vacating the site the staging area will be stabilized in accordance with the project WPCP.

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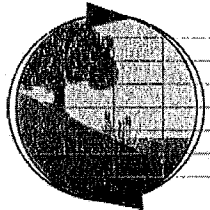
Keith W. Merkel, Principal Consultant,

**APPENDIX G**  
**EELGRASS MITIGATION AND MONITORING PLAN**



**EELGRASS MITIGATION AND MONITORING PLAN  
IN SUPPORT OF THE  
MISSION BAY PARK NAVIGATIONAL SAFETY DREDGING PROJECT  
MISSION BAY, SAN DIEGO, CALIFORNIA**

Prepared for:  
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**October 2016**  
**(Revised December 2016)**

A handwritten signature in black ink, appearing to read "Keith W. Merkel". The signature is written in a cursive, flowing style.

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Keith Merkel, Principal Consultant

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**Final Eelgrass Mitigation and Monitoring Plan in Support of the  
Mission Bay Park Navigational Safety Dredging Project  
Mission Bay, San Diego, California**

**INTRODUCTION**

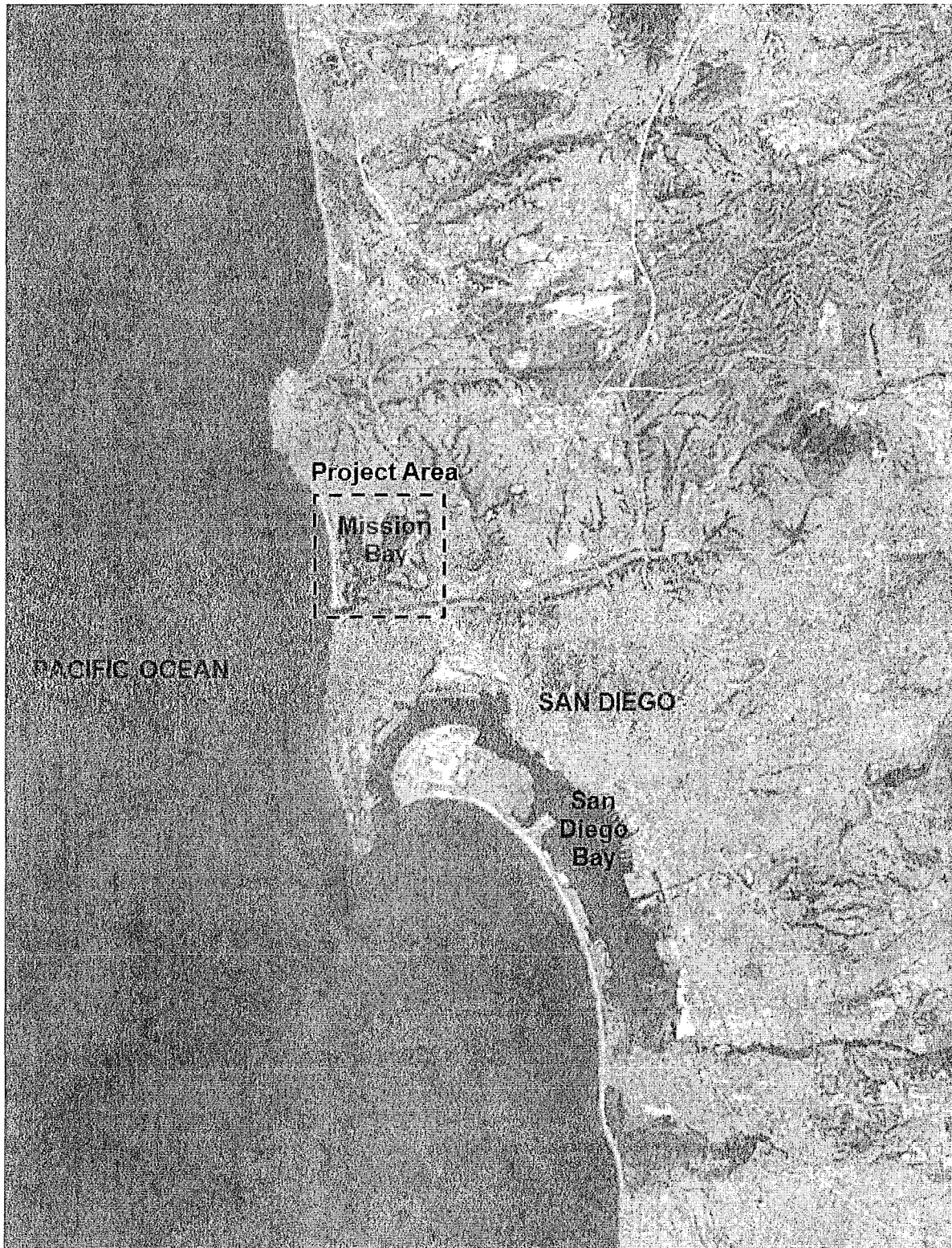
Merkel & Associates Inc. (M&A) was retained by the City of San Diego (City) to review bathymetry and sediment dynamics within Mission Bay, in San Diego, California, and subsequently, to complete a baywide bathymetry and eelgrass (*Zostera marina*) distribution survey. Subsequent to this investigation, M&A was engaged to support the City with identifying boundaries of navigational hazards, conducting sediment characterization, and identification of project impacts and mitigation measures.

The San Diego Fire Department, Lifeguard Services and the Mission Bay Park Improvement Fund Oversight Committee identified areas within the bay that currently require maintenance dredging in order to remove shoals that are causing navigational hazards. Eelgrass is present in all of these locations, and maintenance dredging would result in impacts to eelgrass that requires mitigation. In compliance with the California Eelgrass Mitigation Policy (CEMP) (NMFS 2014), eelgrass impacted by dredging activities would require successful mitigation to be achieved at a 1.2:1 mitigation ratio with an initial revegetation effort totaling not less than 1.38:1, if mitigation is completed concurrent with or following the project impacts. This mitigation and monitoring plan provides a description of existing bathymetry and eelgrass conditions within Mission Bay, and identifies anticipated project impacts, eelgrass restoration plans, and monitoring methods to offset impacts to eelgrass in accordance with the CEMP (Appendix A).

**PROJECT BACKGROUND**

Mission Bay is a recreational bay located in San Diego, California (Figure 1). Historically, the Bay was dominated by tidal mudflat, separated from the Pacific Ocean by a sand spit that is the location of the present day community of Mission Beach. As development progressed in coastal San Diego, a long process was initiated to dredge the mudflats, re-contour the shorelines, and convert Mission Bay into a generally subtidal recreational bay. The majority of work was completed by 1963; however, intermittent maintenance dredging and shoreline stabilization operations have continued in Mission Bay to present day.

Mission Bay is considered to be a dynamic, low-flux sedimentary environment with sediment transport dominated by tidal and wave action. The main inputs of sediments into the bay are littoral sands entering the bay via the Mission Bay entrance channel, fluvial inputs from Rose Creek and Tecolote Creek as well as the San Diego River, and bay beach erosion resulting from wind, wave, and oceanic swell erosion. Other minor inputs include urban storm drains and atmospheric particulates. The main sediment outputs from the bay include tidal export out of the entrance channel, dredging, and shoal or beach reclamation activities.



**Figure 1.** Project Vicinity Map

The City has an active beach maintenance program within Mission Bay Park. Maintenance activities include beach grooming and sand management, trash and debris removal, fire ring cleaning (Merkel & Associates 2008). As a result, most of the sand management activities such as scarp reduction are addressed by beach grooming and raking in the upper portion of the beach environment. However, this active beach management is not capable of addressing sand that migrates within the beach littoral cells below the high tide line or which is transported below the beach within the bay and which develops into shoal formations.

Shoal development as a result of bed transport and deposition of sediment, fluvial inputs, or littoral transport to shoal deposits occur at a low rate and as a result of punctuated events within the dredged waterways of Mission Bay. When these shoals rise to a level that they effect navigation, they are potentially subject to maintenance dredging removal. Not all shoaling must be removed as the ramifications of shoaling on public health and safety is not evenly distributed throughout the Bay. However, where shoals threaten vessel grounding in high speed or high traffic areas, or where shoaling limits access for emergency response, these have been identified as navigational hazards by the City Fire Department Lifeguard Services. These hazards to navigation are the focus of removal under the present dredging program.

Several areas of the Bay have been identified where sediment accretion has decreased water depth to a point that has resulted in a navigation hazard (Figure 2). There are 14 identified dredge areas identified as Dredge Areas 1 through 15 omitting Dredge Area 8. Dredge Area 8 on the western tip of Crown Point at Riviera Shores has been omitted from the project, although originally contemplated for dredging (still outlined but not labeled). This omission was based on the fact that activities at this site are not considered to be maintenance activities to return the bay to original chart conditions. Rather the shoreline has eroded back so far in this area as to generate a navigation concern at high tide due to loss of shoreline and not infill of original navigational waters. Further, it is believed that this area cannot be corrected by replacing sand alone and requires greater engineering consideration for shoreline stabilization that exceeds the purpose of this project. For this reason, the site has been removed from the project. Site numbering has been retained, as there have been several prior documents as well as coordination activities that have been based on the original numbering sequence. A small dredge area identified as 5B has also been removed since earlier evaluations.

Concurrent with proposed navigational safety dredging, multiple sediment reuse areas have been identified. These include the partial backfilling of borrow pits in Sail Bay that were excavated to generate sand for shoreline widening in Sail Bay in 1986 under the Sail Bay Improvements Project. The backfilled pits would allow for eelgrass restoration as partial mitigation of eelgrass impacts. Additional reuse would occur within Leisure Lagoon to raise the lagoon floor to elevations suitable to improve water flushing leading to better water quality and support of eelgrass habitat. Final reuse areas are located on Crown Point Shores and northeast Vacation Isle where beach sand has eroded down to feed the adjacent shoals that would be removed for navigational safety reasons. These shoals and beach replacements are not authorized operations of the City's mechanized beach maintenance crews and thus must be included within project permits in order to allow completion of work.



Figure 2. Project Site Map

**EELGRASS IMPACTS AND MITIGATION REQUIREMENTS**

**Summary of Project Eelgrass Impacts**

Maintenance dredging at the identified locations would eliminate hazards improving safety along shorelines and in open navigation zones of the Bay. It is anticipated that between 122,000 and 220,850 cubic yards of sediment would be dredged. The broad range in volumes is based on allowable overdepth dredging in generally very shallow dredge cuts. Table 1 summarizes the dredging by individual dredge areas and includes the area, volume of cut, and lower design elevation of the final dredged area. In addition, the table identifies the extent of eelgrass impact anticipated to occur at each dredge area. The extent of dredging and volumes of dredge material generated are derived from the Mission Bay Navigational Safety Dredging project plans (Rick Engineering Company 2016). The extent of eelgrass impact is based on the extent of eelgrass as determined during 2013 baywide eelgrass surveys (Figure 3). The extent of eelgrass is subject to variability through time and as such, the survey results from 2013 are considered to be a planning benchmark (M&A 2013). Mitigation will be determined based on pre-dredging and post-dredging surveys conducted under the guidance of the CEMP (NMFS 2014).

**Table 1. Dredge Area Summary.**

LOCATION	AREA (ACRES)	DREDGE ELEV. (FT NGVD29/MLLW)	CUT VOL (CY)	FILL VOLUME (CY)	1-FT OVERDREDGE (CY)	2-FT OVERDREDGE (CY)	EELGRASS IMPACT (ACRES)
<b>DREDGE AREA</b>							
DREDGE 1A	15.87	-10.5' NGVD /-8.1' MLLW	22,690	-	25,600	-	15.87
DREDGE 1B	0.52	-10.5' NGVD /-8.1' MLLW	590	-	840	-	0.52
DREDGE 1C	0.63	-10.5' NGVD /-8.1' MLLW	720	-	1,020	-	0.63
DREDGE 1D	0.41	-10.5' NGVD /-8.1' MLLW	500	-	660	-	0.41
DREDGE 2	0.41	-10.5' NGVD /-8.1' MLLW	470	-	660	-	0.41
DREDGE 3	2.84	-10.5' NGVD /-8.1' MLLW	5,450	-	4,580	-	2.57
DREDGE 4	0.8	-10.5' NGVD /-8.1' MLLW	610	-	1,290	-	0.64
DREDGE 5A	13.5	-10.5' NGVD /-8.1' MLLW	19,850	-	21,780	-	13.30
DREDGE 5B	NO WORK	NO WORK	NO WORK	-	NO WORK	NO WORK	NO WORK
DREDGE 6	0.67	-10.5' NGVD /-8.1' MLLW	850	-	1,080	-	0.42
DREDGE 7	1.3	-10.5' NGVD /-8.1' MLLW	3,380	-	2,100	-	1.30
DREDGE 8	NO WORK	NO WORK	NO WORK	-	NO WORK	NO WORK	NO WORK
DREDGE 9	1.94	-10	4,770	-	-	-	0.97
DREDGE 10	3.61	-10.5' NGVD /-8.1' MLLW	15,300	8,780	-	-	2.01
DREDGE 11	1.67	-7.0' NGVD /-4.6' MLLW	5,900	5,900	-	-	0.64
DREDGE 12A	11.44	-10.5' NGVD /-8.1' MLLW	22,890	-	-	36,930	0.99
DREDGE 12B	0.13	-10.5' NGVD /-8.1' MLLW	230	-	-	410	0.00
DREDGE 12C	0.11	-10.5' NGVD /-8.1' MLLW	190	-	-	350	0.06
DREDGE 12D	0.07	-10.5' NGVD /-8.1' MLLW	120	-	-	210	0.04
DREDGE 12 E	0.21	-10.5' NGVD /-8.1' MLLW	380	-	-	680	0.04
DREDGE 12F	0.08	-10.5' NGVD /-8.1' MLLW	140	-	-	260	0.00
DREDGE 13 & 14	3.78	-5.0' NGVD /-2.6' MLLW	8,320	8,320	-	-	0.78
DREDGE 15	3.37	-7.0' NGVD /-4.6' MLLW	9,050	9,050	-	-	1.31
<b>TOTAL DREDGE</b>	<b>63.36</b>		<b>122,400</b>	<b>32,050</b>	<b>59,610</b>	<b>38,840</b>	<b>42.93</b>





**Figure 3.** Eelgrass Distribution during 2013 Baywide Eelgrass Survey

The proposed dredging project is expected to impact considerable eelgrass, principally located within the shoals that have developed in the western portions of the bay. Two shoaling regions in particular account for the majority of the shoal development that is considered a navigational hazard. These are dredge areas located at the flares in the channel fed by the Mission Bay federally maintained entrance channel that was maintenance dredged in the long deferred Army Corps of Engineer's 2010-2011 maintenance dredging project in Mission Bay. Dredge areas comprising the shoals just bayward of the federal channel and at the northern flare as the branching channel passes Bahia Point include Dredge Areas 1, 2, 3, 5, 6, and 7. These dredge areas support 85 percent (35.4 acres)

of eelgrass anticipated to be impacted by the maintenance dredging project. Because the Corps' dredging improved channel flow conditions within the entrance channel, it is believed this allow greater migration of sand from areas around West Mission Bay Drive into shoals where the channels flare. As a result, it is anticipated that rate of shoal accumulation will not be sustained as the effects of the Corps' dredging stabilize.

Dredged material is to be fully reused in the development of eelgrass mitigation areas and to repair short segments of three beaches that have eroded into the shoals to be dredged. Table 2 outlines the proposed sediment reuse by site as identified in Figure 2. The fill volumes in these reuse areas has been calculated as the maximum volume generated by the project assuming that full allocated over depth is achieved by the Contractor to ensure that minimum navigation clearances are met. The sediments to be dredged have been determined to be chemically and physically suited to the proposed restoration reuse through collection and testing under the EPA/ACOE-approved SAP (M&A 2015 a and 2015b). The testing program conducted consistent with the Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. (Inland Testing Manual [ITM]) (USEPA/USACE 1998), demonstrated the material to be of similar physical and chemical condition to the sediments native to the reuse sites.

Reuse areas are not proposed to impact eelgrass and will be adjusted spatially as necessary to ensure eelgrass impact avoidance or minimization at the time of construction. Because eelgrass impacts under the CEMP are to be determined through pre-dredging and post-dredging surveys and eelgrass varies somewhat in distribution, it is recognized that some adjustments may be required in the final fill positioning for the reuse areas to best serve their intended mitigation function. In addition, the final fill volumes cannot be known at this time since it is dependent upon the extent of overdredge conducted. This will be accommodated by shifts in fill location, lowering fill elevations, or slight footprint expansions to best meet mitigation needs. In no instance will the reuse areas expand beyond the existing borrow pit boundaries or above the specified elevations.

**Table 2.** Reuse Area Summary.

BENEFICIAL RESUE EELGRASS MITIGATION SITE MITIGATION SITE	AREA (ACRES)	FILL ELEV. (FT NGVD29/MLLW)	FILL VOL (CY)
<b>RESUE SITES</b>			
RESUE WEST 3 **	2.51	-10.5' NGVD /-8.1' MLLW	41,270
RESUE WEST 4 **	2.69	-10.5' NGVD /-8.1' MLLW	50,060
RESUE WEST 6 **	2.23	-10.5' NGVD /-8.1' MLLW	48,690
RESUE WEST 7 **	2.50	-10.5' NGVD /-8.1' MLLW	48,780
CROWN POINT REUSE 2	3.35	BEACH	9,050
REUSE AREA 10	3.75	BEACH	8,780
LEISURE LAGOON	2.45	-7.5' NGVD /-5.1' MLLW	8,320
REUSE AREA 11	2.06	BEACH	5,900
<b>TOTAL REUSE</b>	<b>19.47</b>		<b>220,850</b>
**FILL VOLUME INCLUDES DREDGING CUT VOLUME AND 1-FT AND 2-FT OVER DREDGING VOLUMES			

Eelgrass impact mitigation requirements under the CEMP require replacement of lost eelgrass by establishment of compensatory eelgrass mitigation at ratios that fully offset losses. This requires eelgrass to be restored at an equivalent area and density as well as replacing lost functions that accrue with delays between impact and restoration of replacement eelgrass.

For mitigation projects that are implemented concurrent with or immediately following project impacts, mitigation ratios require successful establishment of 1.2 acres of eelgrass for each acre of eelgrass lost. This 1.2:1 mitigation ratio is outlined in the CEMP along with scaled increases in mitigation for mitigation delay. While the requirements for successful implementation of eelgrass mitigation are outlined in the CEMP, the CEMP also includes a requirement for a minimum planting effort above the final mitigation need. In southern California this minimum planting effort is 1.38 acres for each acre impacted. The minimum targeted acreage is based on variable regional success rates and is intended to offset failure risks. The minimum planting rate of 1.38:1 does not alter the overall success requirement of 1.2: 1 outlined under the CEMP (NMFS 2014). Mitigation that is fully installed and functional prior to impact may be applied in compensation under the CEMP at a 1:1 ratio.

### **Eelgrass Mitigation Needs**

With the proposed project, there is a baseline anticipated mitigation need to offset impacts to 42.93 acres of eelgrass. Impacts are proposed to be compensated for by a combination of application of existing mitigation credit that the City has developed in Mission Bay Park for offset of impacts in Mission Bay Park, as well as new restoration both within dredge areas and sediment reuse areas intended to develop eelgrass restoration areas in sites that are presently too deep to support eelgrass.

Depending upon the extent of mitigation derived from existing completed mitigation sites that have been established for over 3 years and that which will be derived from project associated restoration, the successful mitigation required may range from mitigation to impact ratios from 1:1 to 1.2:1 with associated initial planting requirements being as high as 1.38:1. Assuming no eelgrass were present within the previously established eelgrass mitigation sites at the time of mitigation, the anticipated 42.93 acre impact to eelgrass would require successful establishment of 51.51 acres of eelgrass from an initial planting of 59.24 acres of eelgrass. The ultimate mitigation need is to be based on a comparison of pre-dredging and post-dredging eelgrass surveys and deduction of the amount of eelgrass available from previously established eelgrass as discussed below.

### **EELGRASS MITIGATION APPROACH**

#### **Existing Eelgrass Mitigation Lands**

The CEMP incorporates potential for use of established eelgrass as a mitigation tool for offsetting impacts at a 1:1 mitigation ratio. This applies for mitigation banks or applicant sponsored pre-impact mitigation implementation. In 1999, the City of San Diego developed an eelgrass and intertidal habitat mitigation Memorandum of Agreement (MOA) in order to track and utilize surplus mitigation generated during the completion of other maintenance and capital projects within Mission Bay Park. The MOA, identified as the Mission Bay Park Mitigation Bank Agreement (City of

San Diego, 1999) recognized the development of larger than required eelgrass and intertidal mitigation areas within Mission Bay Park in order to ensure permit compliance needs were met and allowed the City to track and manage the mitigation for future mitigation requiring projects within Mission Bay Park. In some cases, the allowance for “banking” of mitigation surplus was explicit in authorizing permits, in others it was authorized by adoption of the Southern California Eelgrass Mitigation Policy (NMFS 1991), which allowed for surplus banking under provision 11 of the SCEMP. The MOA was adopted by National Marine Fisheries Service and U.S. Fish & Wildlife Service by signature. Banking was established by Coastal Commission through permit conditions under CDP 6-03-208 and 6-93-163. The Corps of Engineers and the California Department of Fish & Game (Wildlife) did not enter into the MOA. The last application of the banking document was in 2011 in association with the Rose Creek Bike/Pedestrian Path and Bridge Project (CDP 6-10-052). At the time of last valuation in this transaction, the Mission Bay Mitigation Bank had 13.01 acre of surplus eelgrass and 4.51 acre of intertidal habitat distributed across four sites; South Shores Embayment, Ventura Cove, East Ski Island, and the Stribley Marsh Reserve (renamed from the Crown Point Shores Intertidal Mitigation Area, after the passing of Robin Stribley, the City’s Natural Resource Manager) (Merkel & Associates 2011).

It is intended that all of the available mitigation within the established mitigation areas be applied to the mitigation needs for the maintenance dredging project in order to offset the overall scale of successful mitigation required to be developed for the project impacts. This mitigation area would be applied at a 1:1 area ratio.

In order to apply this mitigation to the project, a post-dredging survey of the existing mitigation sites under the MOA will be completed and the mitigation ledgers will be updated and submitted as a part of the post-dredging eelgrass survey. These ledgers will provide a calculated offset of the total mitigation needed for the project. The residual eelgrass mitigation will be derived from restoration of the dredge areas and subtidal reuse areas to be restored to eelgrass under this mitigation plan.

### **Project Developed Eelgrass Mitigation Sites**

#### ***Dredge Area Restoration***

All of the dredge areas lowered for navigation within the western basin of Mission Bay (defined as being west of the Ingraham and Glenn Rick Bridges) will be replanted with eelgrass following excavation of the shoals. In addition, the shoreline dredge areas and the reuse area within Leisure Lagoon will be planted with eelgrass. Dredge Area 12 within the outer Rose Creek delta will not be replanted with eelgrass as the area presently supports very limited eelgrass and has not had a high frequency of eelgrass occupancy historically. As a result, it is anticipated that the maintenance dredging will further reduce the suitability of this site to support eelgrass in the future.

Replanting of dredged areas will be performed using anchored bare root planting units as discussed later in this document. The restoration planting will be subject to a 1.2:1 successful mitigation requirement with a minimum of 1.38:1 initial restoration planting effort as dictated by the CEMP.

In order to prepare the replanted dredge areas for restoration planting, dredging in the dredge sites will be cut to an overdredge depth of not more than 1-foot below target design grade. The slopes within the cut will be flattened to an undulating condition of not more than  $\pm 1$  foot over 5 running feet in order to maintain plantable slopes and limited site rugosity. Leveling will be done by the dredging Contractor at the time of construction but may be supplemented prior to planting by the eelgrass restoration team.

### ***Reuse Area Restoration***

In addition to use of the dredge area replanting, the project also relies on restoration planting within the subtidal sediment reuse areas. These areas have been explicitly planned to accept the dredged material in a manner that allows for staged filling of the deep basins in lifts based on the sediment character and extent of eelgrass within the dredged material.

To best develop the eelgrass mitigation site conditions desired at the reuse areas fills in the borrow sites within Sail Bay will be placed in lifts of sediment derived first from the fine sediments to be removed from Dredge Area 12, the outer end of the Rose Creek delta. This material is very fine and not desirable for eelgrass restoration. However, by placing it first in the bottom three feet of the Reuse Sites, it will be contained by the borrow pit walls and allow subsequent sands to be placed to a higher fill elevation. This fine material from the Rose Creek shoal (Dredge Area 12) is considered to be highly compressible and thus will not provide an equivalent volume in the fill area as it presently occupies in the dredge area. As a result, a minor reduction in final fill elevation is anticipated within the Reuse West areas. The rate of consolidation is anticipated to be fairly rapid given the substantial sand load to be placed above the silty materials.

After Dredge Area 12 material is placed in the Reuse West areas, filling of these areas will progress placing the remaining sandier dredge material into the fill site commencing first with the dredge material derived from sites with the least amount of eelgrass present. As these areas are depleted, sites with increasing amounts of eelgrass will be dredged and placed such that the final fill will include substantial amounts of eelgrass rhizome and root material. The final fill elevation within the Reuse West areas will be at or below -10.5 feet NGVD29 (-8.1 feet MLLW).

Because eelgrass is a rhizomatous seagrass that spreads vegetative from rhizomes, this fill staging will result in substantial amounts of viable eelgrass plant material being placed in the top fill elevations and is expected to aid in rapid establishment of eelgrass within the Reuse West sites.

In addition to the Reuse West sites in Sail Bay, material is to be placed into the deep basin of Leisure Lagoon to raise the floor of the lagoon to accept eelgrass restoration and to improve water circulation and quality. Leisure Lagoon is to be filled by material derived from the shoals that extend across the lagoon mouth. This material will be moved from the mouth and placed within the deeper basin floor to raise this basin floor up to an elevation of approximately -7.5 feet NGVD29 (-5.1 feet MLLW).

### ***Anticipated Eelgrass Mitigation Yield***

The proposed site restoration is anticipated to yield eelgrass at both replanted dredged sites and replanted subtidal reuse sites. Beach reuse sites are well above suitable elevations to support eelgrass and are thus not proposed to be planted.

Eelgrass occurs within low intertidal and shallow subtidal environments controlled by a number of environmental parameters. In Mission Bay there are two parameters of greatest importance to defining eelgrass distribution. These include desiccation stress at the upper margin of eelgrass growth. This typically limits eelgrass to a tidal elevation below approximately -1.9 feet NGVD29 (+0.5 feet MLLW). However, the upper margin of eelgrass migrates upward during the winter and lowers during the peak of the summer due to tidal conditions and prevailing climate. At its lower margin, eelgrass is restricted by a lack of adequate hours of light required to meet metabolic demands. Over multiple years of monitoring there are several other environmental parameters that have been known to drive eelgrass temporal and spatial dynamics in Mission Bay on a less expansive or less frequent basis. These include slope instability, current velocities, disease, climatic variance, and anthropogenic and biogenic disturbances (Merkel & Associates 2013).

Light availability (a function of water depth and water clarity) is of paramount importance for eelgrass growth (Merkel & Associates, Inc. 2000, 2005). The west basin of Mission Bay is located closer to the entrance channel of the Bay and tends to contain well circulated and clear waters. In contrast, the east basin of the Bay is farther from the entrance channel and is not as well flushed. In addition, creeks and large storm drains enter the Bay in the east basin (the largest of which are Rose Creek and Tecolote Creek) and input fine sediment and debris into the eastern portions of the Bay. Baywide eelgrass surveys illustrate that both the presence and persistence of eelgrass is the west basin of Mission Bay is greater than in the east basin (Merkel & Associates, Inc. 2013). When examining eelgrass occurrence frequency data derived from multiple years of survey over the past three decades, the relative stability of eelgrass in the western portion of the bay can be seen in strong contrast to the more variable eelgrass presence in the eastern portions of the bay (Figure 4). What is not immediately clear from the frequency analyses in Figure 4 that applies all eelgrass cover classes (sparse to dense eelgrass) evenly, is that the eastern basin also generally supports a low overall coverage of eelgrass across the bottom, even when present.

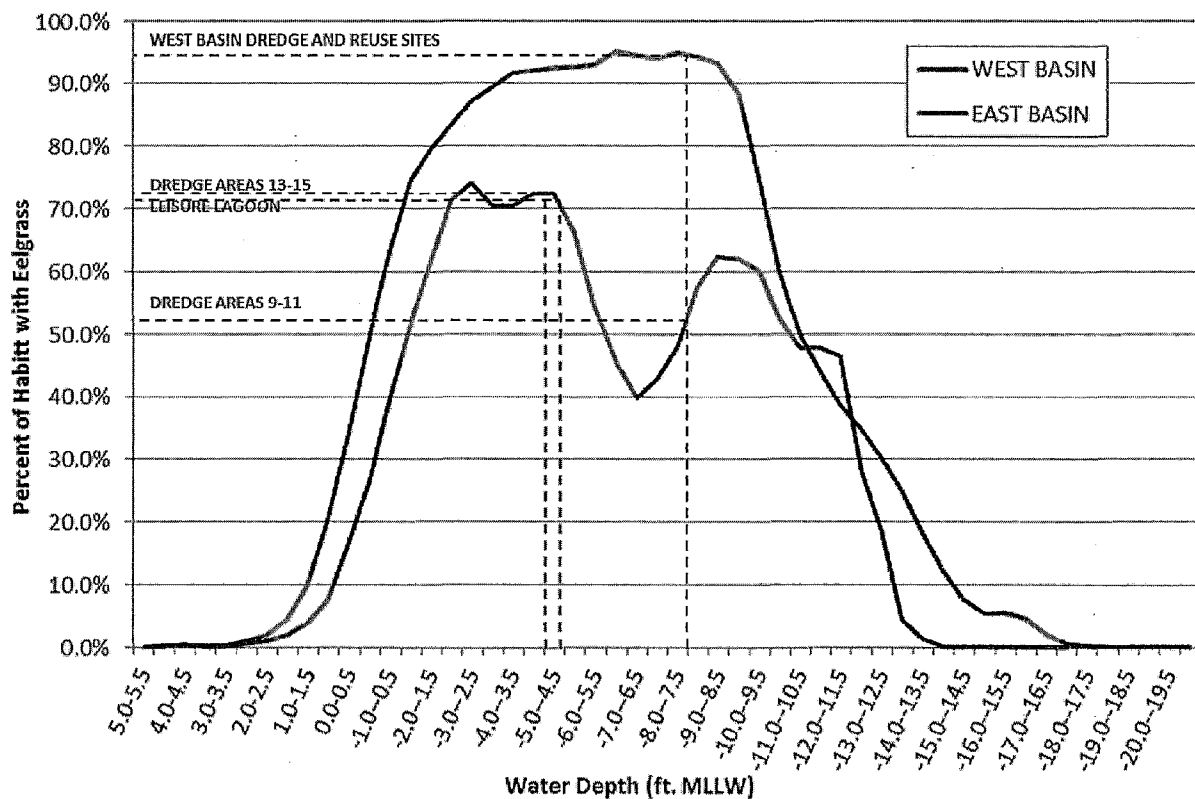


Figure 4. Eelgrass Occurrence Frequency Distribution

Based on the controlling factors that influence the distribution in the bay, it is not possible to assume that all areas within the bay waters are equally suited to support eelgrass. In order to estimate potential for success of restored eelgrass at each site following completion of dredging, the Bay was first separated into east (Fiesta Bay) and west (Sail Bay) basins, using the two bridges of Inghram Street that cross the bay at Vacation Isle as a dividing line. Using bathymetry and eelgrass coverage from the 2013 baywide survey (Merkel & Associates, Inc. 2013), total acres of intertidal

and subtidal habitat was determined by water depth for each basin using ESRI® ArcGIS. All biological analytical work has been conducted in MLLW rather than the project design and engineering datum of NGVD29 (Rick Engineering Company 2016). For this analysis, water depth was divided by half foot increments (e.g., -0.5 to -1.0 feet MLLW, -1.0 to -1.5 feet MLLW, etc.). The total acres of eelgrass within each depth range were then calculated for each basin. Finally, the percent of eelgrass-occupied habitat was determined as acres of eelgrass divided by total acres of habitat available at each depth range.

The results of the analysis are presented in Figure 5. Within the west basin, the water depths that support the greatest percent of eelgrass-occupied habitat occur between -4 and -9 feet MLLW. At -8 feet MLLW (the project design depth for maintenance dredging sites) within the west basin, the percent of habitat occupied by eelgrass is 95 percent. Within the east basin, the water depths that support the greatest percent of eelgrass-occupied habitat occur between -2 and -5 feet MLLW. This result is expected as the lower water clarity in the east basin of the Bay leads to less light available for growth, and therefore, lower eelgrass coverage in deeper waters. At the -8 foot MLLW target depth for maintenance dredging in the east basin, the percent of available habitat occupied by eelgrass is 52 percent, far lower than at the same water depth in the west basin. Further, as indicated previously, the density and sparseness of coverage in this basin as the lower limits is also much lower than similar depths within the west basin.



**Figure 5.** Percent of total available habitat by depth range that supports eelgrass within west and east basins of Mission Bay.



Based on this analysis the assumption can be made that restoration of eelgrass at the maintenance dredging sites following project construction would yield less than 100% coverage of eelgrass, and that restored sites in the east basin would yield substantially lower eelgrass coverage of those restored in the west basin. Using the design depths for the various dredge and reuse sites, eelgrass restoration success has been predicted using the existing eelgrass depth distribution information presented in Figure 5. By multiplying the area of dredge or reuse sites by the predicted eelgrass success rate, the individual site yields can be estimated and the overall successful restoration area can be predicted from restoration plantings.

Table 3 summarizes the extent of dredged areas, eelgrass impacts anticipated eelgrass planting area and predicted eelgrass restoration return within project areas. Dredge Area 12 is not proposed to be planted, but may be planted in the final restoration program if the depth distribution suggests benefit in planting at the time of completion of the pre-dredging and post-dredging surveys. Under the proposed restoration program a total area of 63.69 acres would be replanted. This area would exceed the minimum required initial planting of 59.24 acres by 8 percent. The anticipated yield from this planting is 55.07 acres which exceeds the minimum of 51.51 acres required by 7 percent. The ultimate mitigation area planting and success requirement is dependent upon the determined impact under the CEMP required pre- and post-dredging surveys as well as the extent of eelgrass already developed within mitigation sites.

An additional factor that may affect the extent of eelgrass planting is the extent of eelgrass establishment success within the Reuse West sites that are capped with eelgrass rich sands. It is expected that this final material placement will generate a good initial eelgrass colonization of this site, thus reducing the overall planting needs within the Reuse Sites. Dredged areas, however, are expected to require full planting.

**Table 3.** Total dredge area, eelgrass impact and predicted eelgrass from restoration actions

SITE	AREA (ACRES)	EELGRASS IMPACT (ACRES)	EELGRASS TRANSPLANT AREA (ACRES)	PREDICTED SUCCESS RATE (%)	PREDICTED EELGRASS RESTORED (ACRES)
<b>DREDGE SITES</b>					
DREDGE 1A	15.87	15.87	15.87	95%	15.08
DREDGE 1B	0.52	0.52	0.52	95%	0.49
DREDGE 1C	0.63	0.63	0.63	95%	0.60
DREDGE 1D	0.41	0.41	0.41	95%	0.39
DREDGE 2	0.41	0.41	0.41	95%	0.39
DREDGE 3	2.84	2.57	2.84	95%	2.70
DREDGE 4	0.8	0.64	0.80	95%	0.76
DREDGE 5A	13.5	13.30	13.50	95%	12.83
DREDGE 6	0.67	0.42	0.67	95%	0.64
DREDGE 7	1.3	1.30	1.30	95%	1.24
DREDGE 9	1.94	0.97	1.94	52%	1.01
DREDGE 10	3.61	2.01	3.61	52%	1.88
DREDGE 11	1.67	0.64	1.67	52%	0.87
DREDGE 12A	11.44	0.99	0.00	NA	0
DREDGE 12B	0.13	0.00	0.00	NA	0
DREDGE 12C	0.11	0.06	0.00	NA	0
DREDGE 12D	0.07	0.04	0.00	NA	0
DREDGE 12 E	0.21	0.04	0.00	NA	0
DREDGE 12F	0.08	0.00	0.00	NA	0
DREDGE 13 & 14	3.78	0.78	3.78	71%	2.68
DREDGE 15	3.37	1.31	3.37	70%	2.36
<b>TOTAL DREDGE</b>	<b>63.36</b>	<b>42.93</b>	<b>51.32</b>		<b>43.90</b>
<b>RESUSE SITES</b>					
RESUSE WEST 3	2.51	-	2.51	95%	2.38
RESUSE WEST 4	2.69	-	2.69	95%	2.55
RESUSE WEST 6	2.23	-	2.23	95%	2.12
RESUSE WEST 7	2.50	-	2.50	95%	2.37
LEISURE LAGOON	2.45	-	2.45	95%	1.74
<b>TOTAL REUSE</b>	<b>12.37</b>	<b>-</b>	<b>12.37</b>		<b>11.17</b>
<b>PROJECT TOTAL</b>	<b>75.73</b>	<b>43</b>	<b>63.69</b>		<b>55.07</b>

## **SITE STABILIZATION FOR PLANTING**

Dredging is anticipated to result in generally acceptable surfaces for eelgrass planting based on construction criteria requiring elevations of the site to be controlled to design tolerances with internal site rugosity being controlled by specification of maximum undulations of not more than 1 foot over 5 running feet. In addition, it is anticipated that dredged and filled sites will weather somewhat following dredging. However, the extent of post-dredging weathering will vary by site location and additional flattening of high points may be required by dragging an I-beam or swinging a dredge bucket across the bottom to knock ridges into valleys and create a more suitable planting condition.

The planting of the mitigation site will follow dredging allowing for a period of site stabilization that will vary from area to area based on the site developing suitable planting conditions. Because the dredging work is proposed to be completed during the winter months and eelgrass planting is best completed during the active growing season, some sites will have a longer period to stabilize than others before planting may occur. Sites will be inspected for stability and suitability to accept eelgrass planting units. This requires the site surface sediments to not be shifting excessively, the site should not trap large amounts of detritus, and the site sediments should be consolidated adequately to hold anchored planting units within the prevailing current and wave regimes.

Given the character of the dredge material as generally silty to clean sand, it is expected that site conditions it is expected that the individual dredge and reuse areas will rapidly become suitable to support eelgrass soon after site construction and certainly within not more than 1 to 3 months. The sites will be planted following a sediment stabilization period, once tidal elevation and sediment suitability have been met.

## **EELGRASS PLANTING PLAN**

### **PLANTING CHALLENGES AND REQUIREMENTS**

The eelgrass restoration planting program required for the Mission Bay Navigational Safety Dredging is larger than any prior active eelgrass restoration project undertaken in California in a single planting season. However, multiple prior eelgrass planting projects have been completed with active planting exceeding 10 acres. These include eelgrass restoration for the Mission Bay Shoreline Protection Projects I & II (11.9 acres), Navy Eelgrass Mitigation Site 5 in San Diego Bay (17.5 acres), Agua Hedionda Lagoon Dredging (14.2 acres), the Port of Los Angeles Pier 300 Eelgrass Expansion Area (14.5 acres), and the San Diego Bay South Bay Borrow Site Transplant (10.5 acres). The scale of the restoration effort is, itself a major challenge to be considered in the completion of work and experience in large scale eelgrass restoration projects is required to be successful.

The transplant areas are further located within a highly active recreational embayment. Given the seasonal overlap between the eelgrass high growth period when planting is to be done and periods of high recreational use on Mission Bay, care must be taken to protect restoration teams completing eelgrass planting from hazards of boaters on the bay. Further, it is necessary to ensure that the restoration does not conflict with boating use. This requires work to be conducted in small

buoy line protected planting areas that are moved and reset as each successive area is planted. Where necessary, planting may be conducted early in the morning or during periods when high speed traffic is either limited or precluded by existing regulations. These various measures were employed to deconflict eelgrass restoration and public uses of the bay during eelgrass restoration within multiple Mission Bay sites in Sail Bay (1986), South Shores Embayment (1994), the Mission Bay Shoreline Protection Projects I & II (1995), Santa Clara Point Launch Ramp (1995), Dana Landing Dock Replacements (1995), De Anza Launch Ramp (1996), Ventura Cove (1996), Santa Clara Cove Storm Water System (1996), Bahia Hotel Dock and Pier Replacement (2011), and the Army Corps of Engineers Mission Bay Channel Dredging (2011). Most recently, similar mid-bay large-scale eelgrass restoration was completed in Lower Newport Bay (2012) using multiple tools to ensure safe completion of the restoration while also ensuring continuous bay use by the navigating public. This was accomplished by extending swim float lines around planting areas each day and retrieving the float lines and redeploying lines with each planting area movement. In 2016, eelgrass planting was conducted in the Port of Los Angeles within a highly active windsurfing area. This was deconflicted by timing the planting work to be completed early in the day when windsurfers were not active. Given the multiple planting sites to be planted in Mission Bay under this project, it is anticipated that planting work will be moved around between sites to avoid use conflicts and ensure project and public safety. This will require a high level of project coordination and good communications with City Lifeguard Services. Experience with such high level coordination for eelgrass and other in-water work will be a priority for the restoration team.

Eelgrass restoration for the project is expected to require extensive planting units to be prepared and planted with short holding times of less than 48 hours from harvest to planting. In addition, the work requires harvest of a large amount of eelgrass. In order to ensure that plants are not unduly exploited or stressed as a result of wasted material or long-holding time, considerable coordination and transplant management is required. Efficient workflow must be maintained. The restoration contractor should have exhibited expertise with such field management of multi-task projects.

#### TRANSPLANT SITES

The transplant sites to be used for mitigation purposes are illustrated in Figure 2 and acreage to be planted are summarized in Table 3. A portion of the sites are maintenance dredging sites that will be planted following dredging. The remainder of the transplant sites are beneficial reuse areas that will be filled to an appropriate depth to support eelgrass.

#### DONOR SITES

Donor eelgrass for the eelgrass transplant will be salvaged from the edge of the dredge cuts at each of the dredge sites where eelgrass currently grows. The edges of dredge cuts are generally defined by vertical initial cuts and post-dredging bank erosion to a stable angle of repose. This stabilization result in undermining the adjacent eelgrass rhizome mat and exposing extensive rhizomes of adjacent eelgrass. The exposed eelgrass will not require hand



*Eelgrass along the edge of a dredge cut displays exposed rhizomes, allowing for easy harvesting of plants that are not anticipated to persist in their current location.*

excavation and will, therefore, be easily harvested. Additionally, eelgrass that is undermined leaving the rhizomes in the water column does not readily regrow and is almost always lost. For this reason, harvesting these areas is an ideal means to minimize the need for extensive additional harvest.

Once all unanchored material has been harvested from dredge sites, the remaining donor material will be harvested from the established eelgrass beds in Sail Bay and along Crown Point Shores, adjacent to the transplant sites.

Factors that contributed to the selection of these donor beds include:

- 1) Proximity to the transplant receiver site that favors both logistic convenience and selection of appropriate plant materials for the area;
- 2) Suitability of donor site size and eelgrass density to provide necessary transplant materials;
- 3) Recovery potential for the donor site; and,
- 4) Accessibility of the donor site and safety.

#### **REFERENCE SITES**

Eelgrass reference sites will be established within central Sail Bay, north and south of Dredge Areas 1-3, northwest and north and east of Dredge Areas 5-7, between Dredge Areas 11 and 15 and south of Dredge Area 10. In addition, reference areas will be established north of Leisure Lagoon to serve as a reference site for Dredge Areas 13-14 and the Leisure Lagoon reuse area. Reference areas will be paired to the sites they are intended to reflect. Reference areas will be of a similar size as the mitigation sites they represent.

The location and boundaries of the reference sites will be finalized at the time of the first post-planting monitoring event based on eelgrass distribution patterns observed during the post-dredging surveys. Monitoring of the reference sites will be conducted coincident with the monitoring of the dredge and re-use transplant areas. Changes in the reference sites over time will be considered to represent natural environmental variability when evaluating the performance of the transplant sites (see Monitoring Program sections).

#### **RESTORATION METHODS**

##### **LETTER OF PERMISSION AND NOTIFICATIONS**

Prior to commencing eelgrass transplantation work, a letter of permission to plant eelgrass will be obtained from the California Department of Fish and Wildlife (CDFW) and the restoration contractor's Scientific Collector's Permit shall be amended to include the eelgrass harvesting required to support this project. The restoration contractor shall have demonstrable experience in obtaining LOAs for eelgrass.

## PLANT COLLECTION

Bare-root eelgrass plant material will be salvaged from the donor beds by "raking" rhizomes out of the surface sediment layers and loosely filling a mesh bag with salvaged material. In collecting eelgrass, care will be taken to work the rhizomes free as opposed to ripping the plants free of the sediment. This will preserve as much root material as possible. Salvaged materials will consist of no less than three healthy internodal segments with well-developed root initiates and vigorous shoots. More intact rhizome segments and roots are preferred for use in the planting unit bundles. Salvaging is a mobile exercise and harvesters will move systematically through an area and collect/groom no more than 10 percent of the plant material within a donor bed. At dredge sites, harvesting may be conducted at a 100 percent level if the site has not been dredged previously. If the site has been dredged, then only the loose eelgrass along the dredge cuts of the site margins may be harvested completely.

Collected material will be held in a flow-through seawater source until it is processed into planting units. No material will be stored for over 24 hours from harvesting to unit preparation. Once units are prepared, they will be stored in open water for no longer than 24 hours for a maximum total of 48 hours of storage from harvest to planting with storage generally being loose in flowing seawater or within mesh nets in the bay.

## TRANSPLANT UNITS

The proposed mitigation will utilize anchored bare-root transplant units. Bare-root transplants are the preferred means of transplanting eelgrass in most situations, and anchored bare-root units are the principal planting units used in large-scale restoration projects at the current time. The survival of such planting units has been shown to be quite high when properly prepared (Fonseca *et al.* 1982; Merkel 1987, 1990a). Similarly, bare-root units have shown an ability to rapidly expand and colonize bare substrate (Merkel 1990b). In addition to offering high unit survival and rapid expansion rates, bare-root units can be prepared with limited damage to the donor bed. Unlike plug extractions, bare-root units can be prepared using materials collected without substantial sediment disturbance. Each transplant unit for the project work will consist of 4-6 turions.

The anchors used in this program will be biodegradable and pliable anchors such as those developed initially for transplants in Mission Bay's Sail Bay (Merkel 1987) and which have subsequently been used in more than 80 eelgrass restoration projects throughout California, Oregon, Washington, and Alaska. These units have been used in more than a dozen eelgrass restoration sites within Mission Bay.

## PLANTING EELGRASS UNITS

Multiple shoreline staging and work areas will be utilized as needed to support the restoration effort. These include an east bay restoration site at Leisure Lagoon, and sites in the west basin and on Crown Point Shores near the transplant sites. Planting at all dredge and re-use transplant sites will be conducted by planting along temporary planting lines laid by spooling weighted lines out from a surface vessel navigating consecutively spaced lines using RTK GPS. By setting lines in this manner early in the day prior to afternoon winds, lines can generally be set with extreme accuracy

of less than one meter error. Lines are marked with uniquely identified buoys to allow for location, information management and surface based retrieval after lines are planted. Using planting lines, the restoration sites are to be planted on 1 meter centers. This layout will allow for ease of tracking work progress and completion of quality control reviews.

The plant materials will be planted by excavating a hole in the sediments with a small trowel or by hand. Each anchor will be planted parallel to the sediment surface and the root/rhizome bundle will be planted approximately 3 to 5 cm below the sediment surface with the anchor being placed approximately 15 cm below the sediment surface. During planting, spot checks of the plantings will be made to ensure proper planting depth and firmness of the anchoring system.

Planting unit spacing is typically determined by balancing the rate of bed establishment with the cost of the transplant project. In some instances, rapid bed establishment is required to minimize potential storm damage or scouring of unconsolidated rhizome mats. In other cases, rapid recovery rates are desirable to meet bed establishment milestone objectives. Taking into account the rate of eelgrass growth and the expanded transplant area to reduce failure risk, a planting unit spacing of one meter on center will be used for all dredge and transplant areas. The transplant unit count to achieve the 63.69 acres anticipated to be planted under this project is 257,750 planting units.

#### **TIMING OF THE RESTORATION WORK**

Timing of dredging and transplant site preparation work is expected to commence in winter of 2017 and be completed by mid-spring 2018. Work will be completed in a generally east to west direction with finer sediments and sands from sites supporting less eelgrass being placed into reuse locations early in the project and dredging in the west basin sites and placement of material from these sites being the last order of work.

Under this construction schedule, eelgrass restoration will commence at the dredge and the re-use sites progressing in a manner that follows the dredging and reuse site development. This would result in Fiesta Bay sites being completed early in the project and west Mission Bay sites being completed later in the planting period. This schedule is ideal for planting because it allows work in the high speed areas of Fiesta Bay to be completed early in the season before the bay gets busy. Work in the speed controlled areas at Leisure Lagoon and West Mission Bay are more readily deconflicted with small work areas being demarcated and moved as planting progresses.

Under the planned transplant schedule, work would commence concurrent with the later phases of dredging in the spring when the official start of the high growth period commences. Work would continue through the summer of the first season following planting. Transplanting is anticipated to require 7 months to complete (210 calendar days, excluding unworkable weather, water quality, or other conditions).

## MONITORING PROGRAM

### PERFORMANCE NEEDS

Following completion of dredging, the pre-dredging and post-dredging surveys will be compared to determine the ultimate impact and mitigation need. The area of eelgrass surplus determined to exist within the City's previously established mitigation areas will be subtracted from the total mitigation need to zero out the residual eelgrass mitigation under this MOA. The new total will be considered the uncompensated eelgrass impact that is subject to compensatory mitigation under the provisions of the CEMP, inclusive of an establishment of successful mitigation at a 1.2:1 ratio with milestone progress being made as outlined in this section.

### ESTABLISHMENT MONITORING

Upon completion of the planting effort, a monitoring program will be initiated and continued for a 60-month (5-year) period as outlined in the CEMP. Spatial distribution, areal extent, percent vegetated cover, and turion density of the transplanted eelgrass and reference sites will be monitored and reported as outlined in the CEMP. Spatial metrics will be evaluated using interferometric sidescan sonar with motion control and RTK corrected GPS for enhanced positional accuracy. The sidescan system provides an acoustic swath image of seafloor within the entire surveyed area. Sidescan backscatter data will be acquired at a frequency of 400 kHz or greater. All data will be collected in latitude and longitude using the North American Datum of 1983 (NAD 83). Surveys will be conducted by running transects spaced to allow for overlap between adjoining sidescan swaths. Following completion of the survey, the data will be converted into a geographically registered mosaic through digital post-processing, and plotted on a geo-rectified aerial image of the dredge, transplant, and reference sites. Eelgrass will then be digitized to show its distribution within the surveyed areas. Eelgrass turion densities will be determined within each transplanted bed collecting a minimum of 20 turion density counts per 1/16 m<sup>2</sup> quadrat within each transplant and reference plot as required to control variance to a level suitable to detect a 25 percent difference between reference and transplant sites with statistical power of 90 percent and  $\alpha=0.10$  and  $\beta=0.10$ .

The monitoring program will be conducted at intervals of 6, 12, 24, 36, 48, and 60-months post-transplant. When monitoring dates fall outside of the normal eelgrass-growing season, dates will be shifted to coincide with the growing season to ensure that valuable information on growth and survival is collected. For each monitoring interval, a draft monitoring report will be prepared and submitted within 30 days of completion of the monitoring interval and data processing. It is anticipated that each monitoring interval will require up to 4 field days to complete the monitoring at all sites.

Monitoring reports will include information from previous monitoring intervals, including numerical comparisons and graphical presentations of changing bed configurations. Graphical comparisons will include generalized bathymetry. The monitoring report will include an analysis of any declines or expansions in eelgrass coverage based on physical conditions of the site, as well as any other significant observations. Finally, the monitoring report will provide a prognosis for the future of the eelgrass bed and will identify the timing for the next monitoring period.



#### **MITIGATION SUCCESS CRITERIA**

Mitigation will be deemed successful when it has met the success criteria outlined in the CEMP. Criteria for determination of transplant success will be based upon a comparison of bed areal extent, percent vegetated cover and density (turions per square meter) between the reference sites and the transplant sites. Specific performance metrics include the areal extent as defined where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of turions (shoots) is identified as the number of turions per square meter, as measured from representative areas within the control or transplanted beds.

Key success criteria are as follows:

- Month 0 – Monitoring should confirm the full coverage distribution of planting units over the initial mitigation site as appropriate to the geographic region.
- Month 6 – Persistence and growth of eelgrass within the initial mitigation area should be confirmed, and there should be a survival of at least 50 percent of the initial planting units with well-distributed coverage over the initial mitigation site. For seed buoys, there should be demonstrated recruitment of seedlings at a density of not less than one seedling per four (4) square meters with a distribution over the extent of the initial planting area. The timing of this monitoring event should be flexible to ensure work is completed during the active growth period.
- Month 12– The mitigation site should achieve a minimum of 40 percent coverage of eelgrass and 20 percent density of reference site(s) over not less than 1.2 times the area of the impact site.
- Month 24– The mitigation site should achieve a minimum of 85 percent coverage of eelgrass and 70 percent density of reference site(s) over not less than 1.2 times the area of the impact site.
- Month 36– The mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site.
- Month 48– The mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site.
- Month 60– The mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site.

Areas that do not meet the above success criteria may be revegetated, and again monitored until the final goal is achieved. Should replanting of the areas at the project site fail to meet the success

criteria; reconstruction of portions of one or more transplant sites may be required to carry out this revegetation. Should the reference areas fail or decline alongside the transplant mitigation areas for reasons outside the control of the City, the City will not be held responsible for similar declines in the dredge or transplant mitigation areas.

**MITIGATION PROGRAM SCHEDULE**

Based on the presently planned transplant window, the preliminary schedule of work is as follows:

<b>ACTIVITIES</b>	<b>TIME PERIOD</b>	<b>REPORTING PERIOD</b>
1. Dredge and Reuse Transplant Site Prep	December 2017-April 2018	-
2. Transplant at Dredge Areas	March 2018-August 2018	-
3. Transplant at Reuse Areas	May 2018-September 2018	
6. Complete 6-Month Survey	March 2019	April 2019
7. Complete 12-Month Survey	September 2019	October 2019
8. Complete 24-Month Survey	September 2020	October 2020
9. Complete 36-Month Survey	September 2021	October 2021
10. Complete 48-Month Survey	September 2022	October 2022
11. Complete 60-Month Survey	September 2023	October 2023

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**Appendix A: California Eelgrass Mitigation Policy (NOAA 2014)**



**NOAA FISHERIES**  
West Coast Region

# California Eelgrass Mitigation Policy and Implementing Guidelines

October 2014



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- ATTACHMENT 8.** Summary of Eelgrass Transplant Actions in California



## I. National Marine Fisheries Service's (NMFS) California Eelgrass Mitigation Policy

### A. Policy Statement

It is NMFS' policy to recommend **no net loss of eelgrass habitat function** in California.

For all of California, compensatory mitigation should be recommended for the loss of existing eelgrass habitat function, but only after avoidance and minimization of effects to eelgrass have been pursued to the maximum extent practicable. Our approach is congruous with the approach taken in the federal Clean Water Act guidelines under section 404(b)(1) (40 CFR 230). In absence of a complete functional assessment, eelgrass distribution and density should serve as a proxy for eelgrass habitat function. Compensatory mitigation options include comprehensive management plans, in-kind mitigation, mitigation banks and in-lieu-fee programs, and out-of-kind mitigation. While in-kind mitigation is preferred, the most appropriate form of compensatory mitigation should be determined on a case-by-case basis.

Further, it is the intent of this policy to ensure that there is no loss associated with delays in establishing compensatory mitigation. This should be accomplished by creating a greater amount of eelgrass than is lost, if the mitigation is performed contemporaneously or after the impacts occur. To achieve this, NMFS, in most instances, should recommend compensatory mitigation for vegetated and unvegetated eelgrass habitat be successfully completed at a ratio of at least 1.2:1 mitigation area to impact area. This ratio is based on present value calculation<sup>1</sup> using a discount rate of 0.03 (NOAA-DARP 1999). This ratio assumes that restored eelgrass habitat achieves habitat function comparable to existing eelgrass habitat within a period of three years or less (Hoffman 1986, Evans & Short 2005, Fonseca *et al.* 1990).

For ongoing projects, once mitigation has been successfully implemented to compensate for the loss of eelgrass habitat function within a specified footprint, NMFS should not recommend additional mitigation for subsequent loss of eelgrass habitat if 1) ongoing project activities result in subsequent loss of eelgrass habitat function within the same footprint for which mitigation was completed and 2) the project applicant can document that no new area of eelgrass habitat is impacted by project activities.

This policy does not address mitigation for potential eelgrass habitat. NMFS recognizes impacts to potential eelgrass habitat may preclude eelgrass movement or expansion to suitable unvegetated areas in the future, potentially resulting in declines in eelgrass abundance over time. In addition, it does not address other shallow water habitats. Regulatory protections in the estuarine/marine realm typically focus on wetlands and submerged aquatic vegetation. Mudflats, sandflats, and other superficially bare habitats do not garner the same degree of recognition and

<sup>1</sup> Present Value (PV) is a calculation used in finance to determine the present day value of an amount that is received at a future date. The premise of the equation is that receiving something today is worth more than receiving the same item at a future date;  $PV = C_1 / (1+r)^n$  where  $C_1$  = resource at period 1,  $r$  = interest or discount rate,  $n$  = number of periods.

concern, even though these are some of the most productive and fragile ecosystems (Reilly *et al.* 1999). NMFS will continue to collaborate with federal and state partners on these issues.

## **B. Eelgrass Background and Information**

Eelgrass species (*Zostera marina* L. and *Z. pacifica*) are seagrasses that occur in the temperate unconsolidated substrate of shallow coastal environments, enclosed bays, and estuaries. Eelgrass is a highly productive species and is considered to be a "foundation" or habitat forming species. Eelgrass contributes to ecosystem functions at multiple levels as a primary and secondary producer, as a habitat structuring element, as a substrate for epiphytes and epifauna, and as sediment stabilizer and nutrient cycling facilitator. Eelgrass provides important foraging areas and shelter to young fish and invertebrates, food for migratory waterfowl and sea turtles, and spawning surfaces for invertebrates and fish such as the Pacific herring. Eelgrass also provides a significant source of carbon to the detrital pool which provides important organic matter in sometimes food-limited environments (*e.g.*, submarine canyons). In addition, eelgrass has the capacity to sequester carbon in the underlying sediments and may help offset carbon emissions. Given the significance and diversity of the functions and services provided by seagrass, Costanza *et al.* (2007) determined seagrass ecosystems to be one of Earth's most valuable.

California supports dynamic eelgrass habitats that range in extent from less than 11,000 acres to possibly as much as 15,000 acres statewide. This is inclusive of estimates for poorly documented beds in smaller coastal systems as well as open coastal and insular areas. While among the most productive of habitats, the overall low statewide abundance makes eelgrass one of the rarest habitats in California. Collectively just five systems, Humboldt Bay, San Francisco Bay, San Diego Bay, Mission Bay and Tomales Bay support over 80 percent of the known eelgrass in the state. The uneven distribution of eelgrass resources increases the risk to this habitat and also contributes to its dynamic nature. Further, the narrow depth range within which eelgrass can occur further places this habitat at risk in the face of global climate change and sea level rise predictions.

Seagrass habitat has been lost from temperate estuaries worldwide (Duarte 2002, Lotze *et al.* 2006, Orth *et al.* 2006). While both natural and human-induced mechanisms have contributed to these losses, impacts from human population expansion and associated pollution and upland development is the primary cause (Short and Wyllie-Echeverria 1996). Human activities that affect eelgrass habitat distribution and abundance, including, but not limited to, urban development, harbor development, aquaculture, agricultural runoff, effluent discharges, and upland land use associated sediment discharge (Duarte 2008) occur throughout California. For example, dredging and filling; shading and alteration of circulation patterns; and watershed inputs of sediment, nutrients, and unnaturally concentrated or directed freshwater flows can directly and indirectly destroy eelgrass habitats. Conversely, in many areas great strides have been made at restoring water quality and expanding eelgrass resources through directed efforts at environmental improvements and resource enhancement. While improvements in eelgrass management have occurred overall, the importance of eelgrass both ecologically and economically, coupled with ongoing human pressure and potentially increasing degradation and losses associated with climate change, highlight the need to protect, maintain, and where feasible, enhance eelgrass habitat.

### **C. Purpose and Need for Eelgrass Mitigation Policy**

Eelgrass warrants a strong protection strategy because of the important biological, physical, and economic values it provides, as well as its importance to managed species under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Vegetated shallows that support eelgrass are also considered special aquatic sites under the 404(b)(1) guidelines of the Clean Water Act (40 C.F.R. § 230.43). The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) developed this policy to establish and support a goal of protecting this resource and its habitat functions, including spatial coverage and density of eelgrass habitats. This NMFS policy and implementing guidelines are being shared with agencies and the public to ensure there is a clear and transparent process for developing eelgrass mitigation recommendations.

Pursuant to the MSA, eelgrass is designated as an essential fish habitat (EFH) habitat area of particular concern (HAPC) for various federally-managed fish species within the Pacific Coast Groundfish Fishery Management Plan (FMP) (PFMC 2008). An HAPC is a subset of EFH that is rare, particularly susceptible to human-induced degradation, especially ecologically important, and/or located in an environmentally stressed area. HAPC designations are used to provide additional focus for conservation efforts.

This policy and guidelines support but do not expand upon existing NMFS authorities under the MSA, the Fish and Wildlife Coordination Act (FWCA), and the National Environmental Policy Act (NEPA). Pursuant to the EFH provisions of the MSA, FWCA, and obligations under the NEPA as a responsible agency, NMFS annually reviews and provides recommendations on numerous actions that may affect eelgrass resources throughout California. Section 305(b)(1)(D) of the MSA requires NMFS to coordinate with, and provide information to, other federal agencies regarding the conservation and enhancement of EFH. Section 305(b)(2) requires all federal agencies to consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH. Under section 305(b)(4) of the MSA, NMFS is required to provide EFH Conservation Recommendations to federal and state agencies for actions that would adversely affect EFH (50 C.F.R. § 600.925). NMFS makes its recommendations with the goal of avoiding, minimizing, or otherwise compensating for adverse effects to EFH. When impacts to NMFS trust resources are unavoidable, NMFS may recommend compensatory mitigation to offset those impacts. In order to fulfill its consultative role, NMFS may also recommend, among other things, the development of mitigation plans, habitat distribution maps, surveys and survey reports, progress milestones, monitoring programs, and reports verifying the completion of mitigation activities.

Eelgrass impact management and mitigation throughout California has historically been undertaken without a statewide strategy. Federal actions with impacts to eelgrass require considerable NMFS staff time for project review, coordination and development of conservation recommendations. As federal staff resources vary with budgets, and threats to aquatic resources remain steady or increase, regulatory streamlining and increased efficiency are crucial for continued protection of important coastal habitats, including eelgrass. The California Eelgrass Mitigation Policy (CEMP) is meant to increase efficiency of existing regulatory authorities in a

programmatic manner, provide transparency to federal agencies and action proponents, and ensure that unavoidable impacts to eelgrass habitat are fully and appropriately mitigated. It is the intent of NMFS to collaborate with other federal, state, and local agencies charged with the protection of marine resources to seek a unified approach to actions affecting eelgrass such that consistency across agencies with respect to this resource may be enhanced.

#### **D. Relevance to Other Federal and State Policies**

Based on our understanding of existing federal and state policies regarding aquatic resource conservation, the CEMP does not conflict with existing policies and complements the federal and state wetland policies as described below. NMFS does not intend to make any recommendations, which, if adopted by the action agency and carried out, would violate other federal, state, or local laws. The CEMP also complements the NOAA Aquaculture Policy and National Shellfish Initiative and builds upon the NOAA Seagrass Conservation Guidelines and the Southern California Eelgrass Mitigation Policy.

##### **1. Corps/EPA Mitigation Rule and supporting guidance**

In 2008, the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the Clean Water Act. The regulations emphasize avoiding impacts to wetlands and other water resources. For unavoidable impacts, the rule incorporates Natural Resource Council recommendations to improve planning, implementing and managing wetland replacement projects, including: science-based assessment of impacts and compensation measures, watershed assessments to drive mitigation sites and plans, measurable and enforceable ecological performance standards for evaluating mitigation projects, mitigation monitoring to document whether the mitigation employed meets ecological performance standards, and complete compensation plans. The regulations also encourage the expansion of mitigation banking and in lieu fee agreements to improve the quality and success of compensatory mitigation projects.

The NMFS policy to recommend no net loss of eelgrass function and the eelgrass mitigation guidelines offered herein align with the provisions of the EPA and Corps mitigation rule, but provide more specific recommendations on how to avoid and minimize impacts to eelgrass and how to implement eelgrass surveys, assessments, mitigation, and monitoring.

##### **2. State of California Wetland Conservation Policies**

The 1993 State of California Wetlands Conservation Policy established a framework and strategy to ensure no overall net loss and long-term gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property, reduce procedural complexity in administration of state and federal wetlands conservation programs, and encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

The State of California is also developing a Wetland and Riparian Area Protection Policy. The first phase of this effort was published as the “Preliminary Draft Wetland Area Protection Policy” with the purpose of protecting all waters of the State, including wetlands, from dredge and fill discharges. It includes a wetland definition and associated delineation methods, an assessment framework for collecting and reporting aquatic resource information, and requirements applicable to discharges of dredged or fill material. The draft specifies that dredge or fill projects will provide for replacement of existing beneficial uses through compensatory mitigation. The preliminary policy includes a determination that compensatory mitigation will sustain and improve the overall abundance, diversity and condition of aquatic resources in a project watershed area.

Based on the definition of wetlands included in these state wetland policies, the policies do not directly apply to subtidal eelgrass habitat, but may apply to intertidal eelgrass habitat. The NMFS policy of recommending no net loss to eelgrass habitat function and recommendations for compensatory mitigation for eelgrass impacts complement the state protection policies for wetlands.

### 3. NOAA Aquaculture Policy and National Shellfish Initiative

In 2011, NOAA released the National Marine Aquaculture Policy and the National Shellfish Initiative. The Policy encourages and fosters sustainable aquaculture development that provides domestic jobs, products, and services and that is in harmony with healthy, productive, and resilient marine ecosystems, compatible with other uses of the marine environment, and consistent with the National Policy for the Stewardship of the Ocean, our Coasts, and the Great Lakes (National Ocean Policy). The goal of the Initiative is to increase populations of bivalve shellfish in our nation’s coastal waters—including oysters, clams, abalone, and mussels—through both sustainable commercial production and restoration activities. The Initiative supports shellfish industry jobs and business opportunities to meet the growing demand for seafood, while protecting and enhancing habitat for important commercial, recreational, and endangered and threatened species and species recovery. The Initiative also highlights improved water quality, nutrient removal, and shoreline protection as benefits from shellfish production and restoration. Both the Policy and the Initiative seek to improve interagency coordination for permitting commercial and restoration shellfish projects, as well as support research and other data collection to assess and refine conservation strategies and priorities.

The regulatory efficiencies, transparency, and compensation for impacts to eelgrass promoted by the CEMP directly support the National Aquaculture Policy statements and National Shellfish Initiative through: (1) protection of eelgrass, an important component of productive and resilient coastal ecosystems in California and habitat for wild species, and (2) improved coordination with federal partners regarding planning and permitting for commercial shellfish projects. Furthermore, research conducted under the direction of the National Shellfish Initiative could be informed by and also inform NMFS consultations regarding eelgrass impacts and mitigation in California.

#### 4. NOAA Seagrass Conservation Guidelines

The NOAA publication, “Guidelines for the Conservation and Restoration of Seagrasses in the United States and Adjacent Waters” (1998) was developed by Mark Fonseca of NOAA’s Beaufort Laboratory along with Jud Kenworthy and Gordon Thayer and was funded by NOAA’s Coastal Ocean Program. The document presents an overview of seagrass conservation and restoration in the United States, discusses important issues that should be addressed in planning seagrass restoration projects, describes different planting methodologies, proposes monitoring criteria and means for evaluation success, and discusses issues faced by resource managers. The CEMP considers information presented in the Fonseca *et al.* document, but deviates in some cases in order to provide reasonable and practicable guidelines for eelgrass conservation in California.

#### 5. Southern California Eelgrass Mitigation Policy

In southern and central California, eelgrass mitigation has been addressed in accordance with the Southern California Eelgrass Mitigation Policy applied by NMFS, US Fish & Wildlife Service, California Department of Fish and Wildlife, California Coastal Commission, US Army Corps of Engineers, and other resource and regulatory agencies since 1991, and which has generally been effective at ensuring eelgrass impacts are mitigated in most circumstances. Given the success of the Southern California Eelgrass Mitigation Policy over its 20-year history, this policy reflects an expansion of the application of the Southern California policy with minor modifications to ensure a high standard of statewide eelgrass management and protection. This policy will supersede the Southern California Eelgrass Mitigation Policy for all areas of California upon its adoption.

## II. Implementing Guidelines for California

This policy and guidelines will serve as the guidance for staff and managers within NMFS for developing recommendations concerning eelgrass issues through EFH and FWCA consultations and NEPA reviews throughout California. This policy will inform NMFS’s position on eelgrass issues for California in other roles as a responsible, advisory, or funding agency or trustee. In addition, this document provides guidance to assist NMFS in performing its consultative role under the statutes described above. Finally, pursuant to NMFS obligation to provide information to federal agencies under Section 305(b)(1)(D) of the MSA, this policy serves that role by providing information intended to further the conservation and enhancement of EFH. Should this policy or guidelines be inconsistent with any formally-promulgated NMFS regulations, those formally-promulgated regulations will take precedence over any inconsistent provisions of this policy.

While many of the activities impacting eelgrass are similar across California, eelgrass stressors and growth characteristics differ between southern California (U.S./Mexico border to Pt. Conception), central California (Point Conception to San Francisco Bay entrance), San Francisco Bay, and northern California (San Francisco Bay to the California/Oregon border). The amount of scientific information available to base management decisions on also differs among areas within California, with considerably more information and history with eelgrass habitat management in southern California than the other regions. Gaps in region-specific scientific

information do not override the need to be protective of eelgrass habitat while relying on the best information currently available from areas within and outside of California. Although the primary orientation of this policy is toward statewide use, where indicated below, specific elements of this policy may differ between southern California, central California, northern California and San Francisco Bay.

NMFS will continue to explore the science of eelgrass habitat and improve our understanding of eelgrass habitat function, impacts, assessment techniques, and mitigation efficacy. Approximately every 5 years, NMFS intends to evaluate monitoring and survey data collected by federal agencies and action proponents per the recommendations of these guidelines. NMFS managers will determine if updates to these guidelines are appropriate based on information evaluated during the 5-year review. Updates to these guidelines and supporting technical information will be available on the NMFS website.

The information below serves as a common starting place for NMFS recommendations to achieve no net loss of eelgrass habitat function. NMFS employees should not depart from the guidelines provided herein without appropriate justification and supervisory concurrence. However, the recommendations that NMFS ultimately makes should be provided on a case-by-case basis to provide flexibility when site specific conditions dictate. In the EFH context, NMFS recommendations are provided to the action agency, which has final approval of the action; in accordance with the MSA, the action agency may take up NMFS recommendations or articulate its reasons for not following the recommendations. In the FWCA context, NMFS makes recommendations which must be considered, but the action agency is ultimately responsible for the wildlife protective measures it adopts (if any). For these reasons, neither this policy nor its implementing guidelines are to be interpreted as binding on the public.

#### **A. Eelgrass Habitat Definition**

Eelgrass distribution fluctuates and can expand, contract, disappear, and recolonize areas within suitable environments. Vegetated eelgrass areas can expand by as much as 5 meters (m) and contract by as much as 4 m annually (Donoghue 2011). Within eelgrass habitat, eelgrass is expected to fluctuate in density and patch extent based on prevailing environmental factors (*e.g.*, turbidity, freshwater flows, wave and current energy, bioturbation, temperature, etc.). To account for seagrass fluctuation, Fonseca *et al.* (1998) recommends that seagrass habitat include the vegetated areas as well as presently unvegetated spaces between seagrass patches.

In addition, there is an area of functional influence, where the habitat function provided by the vegetated cover extends out into adjacent unvegetated areas. Those functions include detrital enrichment, energy dampening and sediment trapping, primary productivity, alteration of current or wave patterns, and fish and invertebrate use, among other functions. The influence of eelgrass on the local environment can extend up to 10 m from individual eelgrass patches, with the distance being a function of the extent and density of eelgrass comprising the bed as well as local biologic, hydrographic, and bathymetric conditions (Bostrom and Bonsdorff 2000, Bostrom *et al.* 2001, Ferrell and Bell 1991, Peterson *et al.* 2004, Smith *et al.* 2008, van Houte-Howes *et al.* 2004, Webster *et al.* 1998). Detrital enrichment will generally extend laterally as well as down slope from the beds, while fish and invertebrates that utilize eelgrass beds may move away from the

eelgrass core to areas around the bed margins for foraging and in response to tides or diurnal cycles (Smith *et al.* 2008).

To encompass fluctuating eelgrass distribution and functional influence around eelgrass cover, for the purposes of this policy and guidelines, eelgrass habitat is defined as areas of vegetated eelgrass cover (any eelgrass within 1 m<sup>2</sup> quadrat and within 1 m of another shoot) bounded by a 5 m wide perimeter of unvegetated area (See Attachment 1 for a graphical depiction of this definition). Unvegetated areas may have eelgrass shoots a distance greater than 1 m from another shoot, and may be internal as well as external to areas of vegetated cover. For isolated patches and on a case-by-case basis, it may be acceptable to include an unvegetated area boundary less than or greater than 5 m wide. The definition excludes areas of unsuitable environmental conditions such as hard bottom substrates, shaded locations, or areas that extend to depths below those supporting eelgrass. Suitable depths can vary substantially depending upon site-specific conditions. In general, eelgrass does not extend deeper than 12 feet mean lower low water (MLLW) in most protected bays and harbors in Southern California, and is more limited in Central and Northern California embayments. However, eelgrass can grow much deeper in entrance channels and offshore areas

## **B. Surveying Eelgrass**

NMFS may recommend action agencies conduct surveys of eelgrass habitat to evaluate effects of a proposed action. Eelgrass habitat should be surveyed using visual or acoustic methods and mapping technologies and scales appropriate to the action, scale, and area of work. Surveys should document both vegetated eelgrass cover as well as unvegetated areas within eelgrass habitat (See section II.A. for definition). Assessing impacts to eelgrass habitat relies on the completion of quality surveys and mapping. As such, inferior quality of surveys and mapping (*e.g.*, completed at an inappropriate scale or using inappropriate methods) may make proper evaluation of impacts impossible, and may result in a recommendation from NMFS to re-survey and re-map project areas. Also, to account for fluctuations in eelgrass habitat due to environmental variations, a reference site(s) should be incorporated into the survey (See section V.B.4 below for more details).

### **1. Survey Parameters**

Because eelgrass growth conditions in California vary, eelgrass mapping techniques will also vary. Diver transects or boundary mapping may be suited to very small scale mapping efforts, while aerial and/or acoustic survey with ground-truthing may be more suited to larger survey areas. Aerial and above-water visual survey methods should be employed only where the lower limit of eelgrass is clearly visible or in combination with methods that adequately inventory eelgrass in deeper waters.

The survey area should be scaled as appropriate to the size of the potential action and the potential extent and distribution of eelgrass impacts, including both direct and indirect effects. The resolution of mapping should be adequate to address the scale of effects reasonably expected to occur. For small projects, such as individual boat docks, higher mapping resolution is appropriate in order to detect actual effects to eelgrass at a scale meaningful to the project size. At larger scales, the mapping resolution may be less refined over a larger area, assuming that



minor errors in mapping will balance out over the larger scale. Survey reports should provide a detailed description of the survey coverage (e.g., number, location, and type of samples) and any interpolation methods used in the mapping.

While many parameters may be useful to describe eelgrass habitat condition (e.g., plant biomass, leaf length, shoot:root ratios, epiphytic loading), many are labor intensive and may be impractical for resource management applications on a day-to-day basis. For this reason, four parameters have been identified for use in eelgrass habitat surveys and assessment of effects of an action on eelgrass. These parameters that should be articulated in eelgrass surveys are: 1) spatial distribution, 2) areal extent, 3) percentage of vegetated cover, and 4) the turion (shoot) density.

a) *Spatial Distribution*

The spatial distribution of eelgrass habitat should be delineated by a contiguous boundary around all areas of vegetated eelgrass cover extending outward a distance of 5 m, excluding gaps within the vegetated cover that have individual plants greater than 10 m from neighboring plants. Where such separations occur, either a separate area should be defined, or a gap in the area should be defined by extending a line around the void along a boundary defined by adjacent plants and including the 5 meter perimeter. The boundary of the eelgrass habitat should not extend into areas where depth, substrate, or existing structures are unsuited to supporting eelgrass habitat.

b) *Aerial Extent*

The eelgrass habitat aerial extent is the quantitative area (e.g., square meters) of the spatial distribution boundary polygon of the eelgrass habitat. The total aerial extent should be broken down into extent of vegetated cover and extent of unvegetated habitat. Areal extent should be determined using commercially available geo-spatial analysis software. For small projects, coordinate data for polygon vertices could be entered into a spreadsheet format, and area could be calculated using simple geometry.

c) *Percent Vegetated Cover*

Eelgrass vegetated cover exists when one or more leaf shoots (turions) per square meter is present. The percent bottom cover within eelgrass habitat should be determined by totaling the area of vegetated eelgrass cover and dividing this by the total eelgrass habitat area. Where substantial differences in bottom cover occur across portions of the eelgrass habitat, the habitat could be subdivided into cover classes (e.g., 20% cover, 50% cover, 75% cover).

d) *Turion (Shoot) Density*

Turion density is the mean number of eelgrass leaf shoots per square meter within mapped eelgrass vegetated cover. Turion density should be reported as a mean  $\pm$  the standard deviation of replicate measurements. The number of replicate measurements (n) should be reported along with the mean and deviation. Turion densities are determined only within vegetated areas of

eelgrass habitat and therefore, it is not possible to measure a turion density equal to zero. If different cover classes are used, a turion density should be determined for each cover class.

## 2. Eelgrass Mapping

For all actions that may directly or indirectly affect eelgrass habitat, an eelgrass habitat distribution map should be prepared on an accurate bathymetric chart with contour intervals of not greater than 1 foot (local vertical datum of MLLW). Exceptions to the detailed bathymetry could be made for small projects or for projects where detailed bathymetry may be infeasible. Unless region-specific mapping format and protocols are developed by NMFS (in which case such region-specific mapping guidance should be used), the mapping should utilize the following format and protocols:

### a) *Bounding Coordinates*

Horizontal datum - Universal Transverse Mercator (UTM), NAD 83 meters, Zone 11 (for southern California) or Zone 10 (for central, San Francisco Bay, and northern California) is the preferred projection and datum. Another projection or datum may be used; however, the map and spatial data should include metadata that accurately defines the projection and datum.

Vertical datum - Mean Lower Low Water (MLLW), depth in feet.

### b) *Units*

Transects, grids, or scale bars should be expressed in meters. Area measurements should be in square meters.

### c) *File Format*

A spatial data layer compatible with readily available commercial geographic information system software producing file formats compatible with ESRI® ArcGIS software should be sent to NMFS when the area mapped supports at least 10 square meters of eelgrass. For those areas supporting less than 10 square meters of eelgrass, a table may alternatively be provided giving the vertices bounding x, y coordinates of the eelgrass areas in a spreadsheet or an ASCII file format. In addition to a spatial layer and/or table, a hard-copy map should be included with the survey report. The projection and datum should be clearly defined in the metadata and/or an associated text file.

Eelgrass maps should, at a minimum, include the following:

- A graphic scale bar, north arrow, legend, horizontal datum and vertical datum;
- A boundary illustrating the limits of the area surveyed;
- Bathymetric contours for the survey area, including both the action area(s) and reference site(s) in increments of not more than 1 foot;
- An overlay of proposed action improvements and construction limits;
- The boundary of the defined eelgrass habitat including an identification of area exclusions based on physical unsuitability to support eelgrass habitat; and

- The existing eelgrass cover within the defined eelgrass habitat at the time of the survey.

### 3. Survey Period

All mapping efforts should be completed during the active growth period for eelgrass (typically March through October for southern California, April through October for central California, April through October for San Francisco Bay, and May through September for northern California) and should be considered valid for a period of 60 days to ensure significant changes in eelgrass distribution and density do not occur between survey date and the project start date. The 60 day period is particularly important for eelgrass habitat survey conducted at the very beginning of the growing season, if eelgrass habitat expansion occurs as the growing season progresses. A period other than 60 days could be warranted and should be evaluated on a case-by-case basis, particularly for surveys completed in the middle of the growing season. However, when the end of the 60-day validity period falls outside of the region-specific active growth period, the survey could be considered valid until the beginning of the next active growth period. For example, a survey completed in southern California in the August-October time frame would be valid until the resumption of the active growth phase (i.e., in most instances, March 1). In some cases, NMFS and the action agency may agree to surveys being completed outside of the active growth period. For surveys completed during or after unusual climatic events (e.g., high fluvial discharge periods, El Niño conditions), NMFS staff should be contacted to determine if any modifications to the common survey period are warranted.

### 4. Reference Site Selection

Eelgrass habitat spatial extent, aerial extent, percent cover and turion density are expected to naturally fluctuate through time in response to natural environmental variables. As a result, it is necessary to correct for natural variability when conducting surveys for the purpose of evaluating action effects on eelgrass or performance of mitigation areas. This is generally accomplished through the use of a reference site(s), which is expected to respond similarly to the action area in response to natural environmental variability. It is beneficial to select and monitor multiple reference sites rather than a single site and to utilize the average reference site condition as a metric for environmental fluctuations. This is especially true when a mitigation site is located within an area of known environmental gradients, and reference sites may be selected on both sides of the mitigation site along the gradient. Environmental conditions (e.g., sediment, currents, proximity to action area, shoot density, light availability, depth, onshore and watershed influences) at the reference site(s) should be representative of the environmental conditions at the impact area (Fonseca *et al.* 1998). Where practical, the reference site(s) should be at least the size of the anticipated impact and/or mitigation area to limit the potential for minor changes in a reference site (e.g., propeller scarring or ray foraging damage) overly affecting mitigation needs. The logic for site(s) selection should be documented in the eelgrass mitigation planning documents.

## C. Avoiding and Minimizing Impacts to Eelgrass

This section describes measures to avoid and minimize impacts to eelgrass caused by turbidity, shading, nutrient loading, sedimentation and alteration of circulation patterns. Not all measures

are equally suited to a particular project or condition. Measures to avoid or minimize impacts should be focused on stressors where the source and control are within the purview of the permittee and action agency. Action agencies in coordination with NMFS should evaluate and establish impact avoidance and minimization measures on a case-by-case basis depending on the action and site-specific information, including prevailing current patterns, sediment source, characteristics, and quantity, as well as the nature and duration of work.

## 1. Turbidity

To avoid and minimize potential turbidity-related impacts to eelgrass:

- Where practical, actions should be located as far as possible from existing eelgrass; and
- In-water work should occur as quickly as possible such that the duration of impacts is minimized.

Where proposed turbidity generating activities must occur in proximity to eelgrass and increased turbidity will occur at a magnitude and duration that may affect eelgrass habitat, measures to control turbidity levels should be employed when practical considering physical and biological constraints and impacts. Measures may include:

- Use of turbidity curtains where appropriate and feasible;
- Use of low impact equipment and methods (*e.g.*, environmental buckets, or a hydraulic suction dredge instead of clamshell or hopper dredge, provided the discharge may be located away from the eelgrass habitat and appropriate turbidity controls can be provided at the discharge point);
- Limiting activities by tide or day-night windows to limit light degradation within eelgrass habitat;
- Utilizing 24-hour dredging to reduce the overall duration of work and to take advantage of dredging during dark periods when photosynthesis is not occurring; or
- Other measures that an action party may propose and be able to employ to minimize potential for adverse turbidity effects to eelgrass.

NMFS developed a flowchart for a stepwise decision making process as guidance for action agencies to determine when to implement best management practices (BMPs) for minimizing turbidity from dredging actions as part of a programmatic EFH consultation in San Francisco Bay. The parameters considered in the flow chart are relevant to all marine areas of California. This document is posted on the NMFS West Coast Region web page ([http://www.westcoast.fisheries.noaa.gov/habitat/habitat\\_types/seagrass\\_info/california\\_eelgrass.html](http://www.westcoast.fisheries.noaa.gov/habitat/habitat_types/seagrass_info/california_eelgrass.html)) and may be used to evaluate avoidance and minimization measures for any project that generates increased turbidity.

## 2. Shading

A number of potential design modifications may be used to minimize effects of shading on eelgrass. Boat docks, ramps, gangways, and similar structures should avoid eelgrass habitat to the maximum extent feasible. If avoidance of eelgrass or habitat is infeasible, impacts should be minimized by utilizing, to the maximum extent feasible, design modifications and construction materials that allow for greater light penetration. Action modifications should include, but are not limited to:

- Avoid siting over-water or landside structures in areas where shading of eelgrass habitat would occur;
- Maximizing the north-south orientation of the structure;
- Maximizing the height of the structure above the water;
- Minimizing the width and supporting structure mass to decrease shade effects;
- Relocating the structure in deeper water and limiting the placement of structures in shallow areas where eelgrass occurs to the extent feasible; and
- Utilizing light transmitting materials in structure design.

Construction materials used to increase light passage beneath the structures may include, but are not limited to, open grating or adequate spacing between deck boards to allow for effective illumination to support eelgrass habitat. The use of these shade reducing options may be appropriate where they do not conflict with safety, ADA compliance, or structure utility objectives.

NMFS developed a stepwise key as guidance for action agencies to determine which combination of modifications are best suited for minimizing shading effects from overwater structures on eelgrass as part of a programmatic EFH consultation in San Francisco Bay. The parameters considered in the flow chart are relevant to all marine areas of California. This document is posted on the West Coast Region web page ([http://www.westcoast.fisheries.noaa.gov/habitat/habitat\\_types/seagrass\\_info/california\\_eelgrass.html](http://www.westcoast.fisheries.noaa.gov/habitat/habitat_types/seagrass_info/california_eelgrass.html)) and may be used to evaluate avoidance and minimization measures for any project that results in shading.

### 3. Circulation patterns

Where appropriate to the scale and nature of potential eelgrass impacts, action parties should evaluate if and how the action may alter the hydrodynamics of the action area such that eelgrass habitat within or in proximity to the action area may be adversely affected. To maintain good water flow and low residence time of water within eelgrass habitat, action agencies should ensure actions:

- Minimize scouring velocities near or within eelgrass beds;
- Maintain wind and tidal circulation to the extent practical by considering orientation of piers and docks to maintain predominant wind effects;
- Incorporate setbacks on the order of 15 to 50 meters from eelgrass habitat where practical to allow for greater circulation and reduced impact from boat maneuvering, grounding, and propeller damage, and to address shading impacts; and
- Minimize the number of piles and maximize pile spacing to the extent practical, where piles are needed to support structures.

For large-scale actions in the proximity of eelgrass habitats, NMFS may request specific modeling and/or field hydrodynamic assessments of the potential effects of work on characteristics of circulation within eelgrass habitat.

#### 4. Nutrient loading

Where appropriate to the scale and nature of potential eelgrass impacts, the following measures should be considered for implementation to reduce the potential for excessive nutrient loading to eelgrass habitat:

- diverting site runoff from landscaped areas away from discharges around eelgrass habitat;
- implementation of fertilizer reduction program;
- reduction of watershed nutrient loading;
- controlling local sources of nutrients such as animal wastes and leach fields; and
- maintaining good circulation and flushing conditions within the water body.

Reducing nutrient loading may also provide opportunities for establishing eelgrass as mitigation for project impacts.

#### 5. Sediment loading

Watershed development and changes in land use may increase soil erosion and increase sedimentation to downstream embayments and lagoons.

- To the extent practicable, maintain riparian vegetation buffers along all streams in the watershed.
- Incorporate watershed analysis into agricultural, ranching, and residential/commercial development projects.
- Increase resistance to soil erosion and runoff. Sediment basins, contour farming, and grazing management are examples of key practices.
- Implement best management practices for sediment control during construction and maintenance operations (*e.g.*, Caltrans 2003).

Reducing sediment loading may also provide opportunities for establishing eelgrass as mitigation for project impacts in systems for which sedimentation is a demonstrable limiting factor to eelgrass.

#### **D. Assessing Impacts to Eelgrass Habitat**

If appropriate to the statute under which the consultation occurs, NMFS should consider both direct and indirect effects of the project in order to assess whether a project may impact eelgrass. NMFS is aware that many of the statutes and regulations it administers may have more specific meanings for certain terms, including “direct effect” and “indirect effect”, and will use the statutory or regulatory meaning of those terms when conducting consultations under those statutes.<sup>2</sup> Nevertheless, it is useful for NMFS to consider effects experienced

<sup>2</sup> In the EFH context, adverse effects include any impact that reduces quality and/or quantity of EFH, including direct or indirect physical, chemical, or biological alterations of the waters or substrate (50 CFR 600.910). The Council of Environmental Quality (CEQ) regulations regarding NEPA implementation (40 CFR 1508.8(a)) define direct and indirect impacts of an action for the purposes of NEPA. Other NMFS statutes provide their own definitions regarding effects.

contemporaneously with project actions (both at the project site and away from the project site) and which might occur later in time.

Generally, effects to eelgrass habitat should be assessed using pre- and post-project surveys of the impact area and appropriate reference site(s) conducted during the time period of maximum eelgrass growth (typically March through October for southern California, April through October for central California, April through October for San Francisco Bay, and May through September for northern California). NMFS should consider the likelihood that the effects would occur before recommending pre- and post-project eelgrass surveys. The pre-construction survey of the eelgrass habitat in the action area and an appropriate reference site(s) should be completed within 60 days before start of construction. After construction, a post-action survey of the eelgrass habitat in the action area and at an appropriate reference site(s) should be completed within 30 days of completion of construction, or within the first 30 days of the next active growth period following completion of construction that occurs outside of the active growth period. Copies of all surveys should be provided to the lead federal agency, NMFS, and other interested regulatory and/or resource agencies within 30 days of completing the survey. The recommended timing of surveys is intended to minimize changes in eelgrass habitat distribution and abundance during the period between survey completion and construction initiation and completion. For example, a post-action survey completed beyond 30 days following construction or outside of the active growing season may show declines in eelgrass habitat as a result of natural senescence rather than the action.

The lead federal agency and NMFS should consider reference area eelgrass performance, physical evidence of impact, turbidity and construction activities monitoring data, as well as other documentation in the determination of the impacts of the action undertaken. Impact analyses should document whether the impacts are anticipated to be complete at the time of the assessment, or whether there is an anticipation of continuing eelgrass impacts due to chronic or intermittent effects. Where eelgrass at the impact site declines coincident with and similarly to decline at the reference site(s), the percentage of decline at the reference site should be deducted from the decline at the impact site. However, if eelgrass expands within the reference site(s), the impact site should only be evaluated against the pre-construction condition of the reference site and not the expanded condition. If an action results in increased eelgrass habitat relative to the reference sites, this increase could potentially be considered (subject to the caveats identified herein) by NMFS and the action agency as potential compensation for impacts to eelgrass habitat that occur in the future (see Section II. E. 3). An assessment should also be made as to whether impacts or portions of the impact are anticipated to be temporary. Information supporting this determination may be derived from the permittee, NMFS, and other resource and regulatory agencies, as well as other eelgrass experts.

For some projects, environmental planning and permitting may take longer than 60 days. To accommodate longer planning schedules, it may also be necessary to do a preliminary eelgrass survey prior to the pre-construction survey. This preliminary survey can be used to anticipate potential impacts to eelgrass for the purposes of mitigation planning during the permitting process. In some cases, preliminary surveys may focus on spatial distribution of eelgrass habitat only or may be a qualitative reconnaissance to allow permittees to incorporate avoidance and minimization measures into their proposed action or to plan for future mitigation needs. The pre-

and post- project surveys should then verify whether impacts occur as anticipated, and if planned mitigation is adequate. In some cases, a preliminary survey could be completed a year or more in advance of the project action.

#### 1. Direct Effects

Biologists should consider the potential for localized losses of eelgrass from dredging or filling, construction-associated damage, and similar spatially and temporally proximate impacts (these effects could be termed “direct”). The actual area of the impact should be determined from an analysis that compares the pre-action condition of eelgrass habitat with the post-action conditions from this survey, relative to eelgrass habitat change at the reference site(s).

#### 2. Indirect Effects

Biologists should also consider effects caused by the action which occur away from the project site; furthermore, effects occurring later in time (whether at or away from the project site) should also be considered. Biologists should consider the potential for project actions to alter conditions of the physical environment in a manner that, in turn, reduce eelgrass habitat distribution or density (*e.g.*, elevated turbidity from the initial implementation or later operations of an action, increased shading, changes to circulation patterns, changes to vessel traffic that lead to greater groundings or wake damage, increased rates of erosion or deposition).

For actions where the impact cannot be fully determined until a substantial period after an action is taken, an estimate of likely impacts should be made prior to implementation of the proposed action based on the best available information (*e.g.*, shading analyses, wave and current modeling). A monitoring program consisting of a pre-construction eelgrass survey and three post-construction eelgrass surveys at the impact site and appropriate reference site(s) should be performed. The action party should complete the first post-construction eelgrass survey within 30 days following completion of construction to evaluate any immediate effects to eelgrass habitat. The second post-construction survey should be performed approximately one year after the first post-construction survey during the appropriate growing season. The third post-construction survey should be performed approximately two years after the first post-construction survey during the appropriate growing season. The second and third post-construction surveys will be used to evaluate if indirect effects resulted later in time due to altered physical conditions; the time frames identified above are aligned with growing season (attempting a survey outside of the growing season would show inaccurate results).

A final determination regarding the actual impact and amount of mitigation needed, if any, to offset impacts should be made based upon the results of two annual post-construction surveys, which document the changes in the eelgrass habitat (areal extent, bottom coverage, and shoot density within eelgrass) in the vicinity of the action, compared to eelgrass habitat change at the reference site(s). Any impacts determined by these monitoring surveys should be mitigated. In the event that monitoring demonstrates the action to have resulted in greater eelgrass habitat impacts than initially estimated, additional mitigation should be implemented in a manner consistent with these guidelines. In some cases, adaptive management may allow for increased success in eelgrass mitigation without the need for additional mitigation.



## E. Mitigation Options

The term mitigation is defined differently by various federal and State laws, regulations and policies. In a broad sense, mitigation may include a range of measures from complete avoidance of adverse effects to compensation for adverse effects by preserving, restoring or creating similar resources at onsite or offsite locations. The Corps and EPA issued regulations governing compensatory mitigation to offset unavoidable adverse effects to waters of the United States authorized by Clean Water Act section 404 permits and other permits issued by the Corps (73 FR 19594; April 10, 2008). For those regulations (33 CFR 332.2 and 40 CFR 230.92, respectively), the Corps and EPA, define "compensatory mitigation" as "the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse effects which remain after all appropriate and practicable avoidance and minimization has been achieved."

When impacts to eelgrass would occur, the action agency should develop a mitigation plan to achieve no net loss in eelgrass function following the recommended steps in this policy. If NMFS determines a mitigation plan is needed, and it was not included with the EFH Assessment for the proposed action, NMFS may recommend, either as comments on the EFH Assessment or as an EFH Conservation Recommendation, that one be provided. Potential mitigation options are described below. The action agency should consider site specific conditions when determining the most appropriate mitigation option for an action.

### 1. Comprehensive management plans

NMFS supports the development of comprehensive management plans (CMPs) that protect eelgrass resources within the context of broader ecosystem needs and management objectives. Recommendations different from specific elements described below for in-kind mitigation may be appropriate where a CMP (*e.g.*, an enforceable programmatic permit, Special Area Management Plan, harbor plan, or ecosystem-based management plan) exists that is considered to provide adequate population-level and local resource distribution protections to eelgrass. One such CMP under development at the time these guidelines were developed is *City of Newport Beach Eelgrass Protection Mitigation Plan for Shallow Water in Lower Newport Bay: An Ecosystem Based Management Plan*. If satisfactorily completed and adopted, it is anticipated the protection measures for eelgrass within this area would be adequate to meet the objectives of this policy.

In general, it is anticipated that CMPs may be most appropriate in situations where a project or collection of similar projects will result in incremental but recurrent impacts to a small portion of local eelgrass populations through time (*e.g.*, lagoon mouth maintenance dredging, maintenance dredging of channels and slips within established marinas, navigational hazard removal of recurrent shoals, shellfish farming, and restoration or enhancement actions). In order to ensure that these alternatives provide adequate population-level and local resource distribution protections to eelgrass and that the plan is consistent with the overall conservation objectives of this policy, NMFS should be involved early in the plan's development.

## 2. In-kind mitigation

In-kind compensatory mitigation is the creation, restoration, or enhancement of habitat to mitigate for adverse impacts to the same type of habitat. In most cases in-kind mitigation is the preferred option to compensate for impacts to eelgrass. Generally, in-kind mitigation should achieve a final mitigation ratio of 1.2:1 across all areas of the state, independent of starting mitigation ratios. A starting mitigation ratio is the ratio of mitigation area to impact area when mitigation is initiated. The final mitigation ratio is the ratio of mitigation area to impact area once mitigation is complete. The 1.2:1 ratio assumes: (1) there is no eelgrass function at the mitigation site prior to mitigation efforts, (2) eelgrass function at the mitigation site is achieved within three years, (3) mitigation efforts are successful, and (4) there are no landscape differences (*e.g.*, degree of urban influence, proximity to freshwater source), between the impact site and the mitigation site. Variations from these assumptions may warrant higher or lower mitigation ratios. For example, a higher ratio would be appropriate for an enhancement project where the mitigation site has some level of eelgrass function prior to the mitigation action.

Typically, in-kind eelgrass mitigation involves transplanting or seeding of eelgrass into unvegetated habitat. Successful in-kind mitigation may also warrant modification of physical conditions at the mitigation site to prepare for transplants (*e.g.*, alter sediment composition, depth, etc.). In some areas, other in-kind mitigation options such as removing artificial structures that preclude eelgrass growth may be feasible. If in-kind mitigation that does not include transplants or seeding is proposed, post-mitigation monitoring as described below should be implemented to verify that mitigation is successful.

Information provided below in Section II.F includes specific recommendations for in-kind mitigation, including site selection, reference sites, starting mitigation ratios, mitigation methods, mitigation monitoring and performance criteria. Many of the recommendations provided in these guidelines for eelgrass assessments, surveys, and mitigation may apply throughout the state even if a non-transplant mitigation option is proposed.

## 3. Mitigation banks and in-lieu-fee programs

In 2006 and 2011, the NMFS Southwest Region (merged with the Northwest Region in 2013 to form the West Coast Region) signed interagency Memorandum of Understandings that established and refined a framework for developing and using combined or coordinated approaches to mitigation and conservation banking and in-lieu-fee programs in California. Other signatory agencies include: the California Resources Agency, California Department of Fish and Wildlife, the Corps, the US Fish & Wildlife Service, the EPA, the Natural Resource Conservation Service, and the State Water Resources Control Board.

Under this eelgrass policy, NMFS supports the use of mitigation bank and in-lieu fee programs to compensate for impacts to eelgrass habitat, where such instruments are available and where such programs are appropriate to the statutory structure under which mitigation is recommended. Mitigation banks and in-lieu fee conservation programs are highly encouraged by NMFS in heavily urbanized waters. Credits should be used at a ratio of 1:1 if those credits have been established for a full three-year period prior to use. If the bank credits have been in place for a

period less than three years, credits should be used at a ratio determined through application of the wetland mitigation calculator (King and Price 2004).

At the request of the action party, and only with approval of NMFS and other appropriate resource agencies and subject to the caveats below, surplus eelgrass area that, after 60-months, exceeds the mitigation needs, as defined in section II.F.6 Mitigation Monitoring and Performance Milestones, has the potential to be considered for future mitigation needs. Additionally, only with the approval of NMFS and other appropriate resource agencies and subject to the caveats below, eelgrass habitat expansion resulting from project activities, and that otherwise would not have occurred, has the potential to be considered for future mitigation needs. Exceeding mitigation needs does not guarantee or entitle the action party or action agency to credit such mitigation to future projects, since every future project must be considered on a case-by-case basis (including the location and type of impact) and viewed in light of the relevant statutory authorities.

#### 4. Out-of-kind mitigation

Out-of-kind compensatory mitigation means the adverse impacts to one habitat type are mitigated through the creation, restoration, or enhancement of another habitat type. In most cases, out-of-kind mitigation is discouraged, because eelgrass is a rare, special-status habitat in California. There may be some scenarios, however, where out-of-kind mitigation for eelgrass impacts is ecologically desirable or when in-kind mitigation is not feasible. This determination should be made based on an established ecosystem plan that considers ecosystem function and services relevant to the geographic area and specific habitat being impacted. Any proposal for out-of-kind mitigation should demonstrate that the proposed mitigation will compensate for the loss of eelgrass habitat function within the ecosystem. Out-of-kind mitigation that generates services similar to eelgrass habitat or improves conditions for establishment of eelgrass should be considered first. NMFS and the federal action agency should be consulted early when out-of-kind mitigation is being proposed in order to determine if out-of-kind mitigation is appropriate, in coordination with other relevant resource agencies (e.g., California Department of Fish and Wildlife, California Coastal Commission, U.S. Fish and Wildlife Service)

### **F. In-kind Mitigation for Impacts to Eelgrass**

As all mitigation project specifics will be determined on a case-by-case basis, circumstances may exist where NMFS staff will need to modify or deviate from the recommended measures described below before providing their recommendation to action agencies.

#### 1. Mitigation Site Selection

Eelgrass habitat mitigation sites should be similar to the impact site. Site selection should consider distance from action, depth, sediment type, distance from ocean connection, water quality, and currents. Where eelgrass that is impacted occurs in marginally suitable environments, it may be necessary to conduct mitigation in a preferable location and/or modify the site to be better suited to support eelgrass habitat creation. Mitigation site modification should be fully coordinated with NMFS staff and other appropriate resource and regulatory agencies. To the extent feasible, mitigation should occur within the same hydrologic system

(e.g., bay, estuary, lagoon) as the impacts and should be appropriately distributed within the same ecological subdivision of larger systems (e.g., San Pablo Bay or Richardson Bay in San Francisco Bay), unless NMFS and the action agency concur that good justification exists for altering the distribution based on valued ecosystem functions and services.

In identifying potentially suitable mitigation sites, it is advisable to consider the current habitat functions of the mitigation site prior to mitigation use. In general, conversion of unvegetated subtidal areas or disturbed uplands to eelgrass habitats may be considered appropriate means to mitigate eelgrass losses, while conversion of other special aquatic sites (e.g., salt marsh, intertidal mudflats, and reefs) is unlikely to be considered suitable. It may be necessary to develop suitable environmental conditions at a site prior to being able to effectively transplant eelgrass into a mitigation area. Mitigation sites may need physical modification, including increasing or lowering elevation, changing substrate, removing shading or debris, adding wave protection or removing impediments to circulation.

## 2. Mitigation Area Needs

In-kind mitigation plans should address the components described below to ensure mitigation actions achieve no net loss of eelgrass habitat function. Alternative contingent mitigation should be specified and included in the mitigation plan to address situations where performance milestones are not met.

### a) *Impacts to Areal Extent of Eelgrass Habitat*

Generally, mitigation of eelgrass habitat should be based on replacing eelgrass habitat extent at a 1.2 (mitigation) to 1 (impact) mitigation ratio for eelgrass throughout all regions of California. However, given variable degrees of success across regions and potential for delays and mitigation failure, NMFS calculated *starting* mitigation ratios using “The Five-Step Wetland Mitigation Ratio Calculator” (King and Price 2004) developed for NMFS Office of Habitat Conservation. The calculator utilizes methodology similar to Habitat Equivalency Analysis (HEA), which is an accepted method to determine the amount of compensatory restoration needed to provide natural resource services that are equivalent to loss of natural resource services following an injury (<http://www.darrp.noaa.gov/economics/pdf/heaoverv.pdf>). HEA is commonly used by NOAA during damage assessment cases, including those involving seagrass. Similar to HEA, the mitigation calculator is based on the “net present value” approach to asset valuation, an economics concept used to compare values of all types of investments, and then modified to incorporate natural resource services. Using the calculator allows for consistency in methodology for all areas within California, avoids arbitrary identification of size of the mitigation area, and avoids cumulative loss to eelgrass habitat that would likely occur with a standard 1:1 ratio (because of the complexity of eelgrass mitigation and the time for created eelgrass to achieve full habitat function).

The calculator includes a number of metrics to determine appropriate ratios that focus on comparisons of quality and quantity of function of the mitigation relative to the site of impact to ensure full compensation of lost function. (see Attachment 4). Among other metrics, the calculator employs a metric of likelihood of failure within the mitigation site based on regional mitigation failure history. As such, the mitigation calculator identifies a recommended starting

mitigation ratio (the mitigation area to eelgrass impact area) based on regional history of success in eelgrass mitigation. Increased initial mitigation site size should be considered to provide greater assurance that the performance milestones, as specified in Section II.F.6, will be met. This is a common practice in the eelgrass mitigation field to reduce risk of falling short of mitigation needs (Thom 1990). Independent of starting mitigation ratio utilized for a given mitigation action, mitigation success should generally be evaluated against a ratio of 1.2:1.

The elevated starting mitigation ratio should be applied to the area of impact to vegetated eelgrass cover only. For unvegetated eelgrass habitat, a starting mitigation ratio of 1.2:1 is appropriate.

To determine the recommended starting mitigation ratio for each region, the percentage of transplant successes and failures was examined over the history of transplanting in the region. NMFS staff examined transplants projects over the past 25 years in all mitigation regions (see Attachment 6). Eelgrass mitigation in Southern California has a 35-year history with 66 transplants performed over that period. In the past 25 years, a total of 47 eelgrass transplants for mitigation purposes have been conducted in Southern California. Forty-three of these were established long enough to evaluate success for these transplants. The overall failure rate, with failure defined as not meeting success criteria established for the project, was 13 percent. Eelgrass mitigation within central California has a better history of successful completion than within southern California, San Francisco Bay, and northern California. However, the number of eelgrass mitigation actions conducted in this region is low and limited to areas within Morro Bay. While the success of eelgrass mitigation in central California has been high, the low number of attempts makes mitigation in this region uncertain. Eelgrass habitat creation/restoration in San Francisco Bay and in northern California has had varied success.

In all cases, best information available at the time of this policy's development was used to determine the parameter values entered into the calculator formula. As regional eelgrass mitigation success changes and the results of ongoing projects become available, the starting mitigation ratio may be updated. Updates in mitigation calculator inputs should not be made on an individual action basis, because the success or lack of success of an individual mitigation project may not reflect overall mitigation success for the region. Rather NMFS should re-evaluate the regional transplant history approximately every 5 years, increasing the record of transplant success in 5 year increments for new projects implemented after NMFS' adoption of these guidelines. If the 5-year review shows that new efforts are more successful than those from the beginning of the 25-year period, NMFS staff should consider removing early projects (e.g., those completed 20 years prior) from the analysis.

On a case-by-case basis and in consultation with action agencies, NMFS may consider proposals with different starting mitigation ratios where sufficient justification is provided that indicates the mitigation site would achieve the no net loss goal. In addition, CMPs could consider different starting mitigation ratios, or other mitigation elements and techniques, as appropriate to the geographic area addressed by the CMP.

Regardless of starting mitigation ratio, eelgrass mitigation should be considered successful, if it meets eelgrass habitat coverage over an area that is 1.2 times the impact area with comparable

eelgrass density as impacted habitat. Please note, delayed implementation, supplemental transplant needs, or NMFS and action agency agreement may result in an altered mitigation area. In the EFH consultation context, NMFS may recommend an altered mitigation area during implementation of the federal agency's mitigation plan following EFH consultation or NEPA review, or as an EFH Conservation Recommendation if the federal agency re-initiates EFH consultation.

(1) Southern California (Mexico border to Pt. Conception)

For mitigation activities that occur concurrent to the action resulting in damage to existing eelgrass habitat, a starting ratio of 1.38 to 1 (transplant area to vegetated cover impact area) should be recommended to counter the regional failure risk. That is, for each square meter of vegetated eelgrass cover adversely impacted, 1.38 square meters of new habitat with suitable conditions to support eelgrass should be planted with a comparable bottom coverage and eelgrass density as impacted habitat.

(2) Central California (Point Conception to mouth of San Francisco Bay).

For mitigation activities that occur concurrent to the action resulting in damage to existing eelgrass habitat, a starting ratio of 1.20 to 1 (transplant area to vegetated cover impact area) should be recommended based on a 0 percent failure rate over the past 25 years (4 transplant actions). It should however be noted that all of these successful transplants included a greater area of planting than was necessary to achieve success such that the full mitigation area would be achieved, even with areas of minor transplant failure.

(3) San Francisco Bay (including south, central, San Pablo and Suisun Bays).

For mitigation activities that occur concurrent to the action resulting in damage to the existing eelgrass bed resource, a ratio of 3.01 to 1 (transplant area to vegetated cover impact area) should be recommended based on a 60 percent failure rate over the past 25 years (10 transplant actions). That is, for each square meter adversely impacted, 3.01 square meters of new habitat with suitable conditions to support eelgrass should be planted with a comparable bottom coverage and eelgrass density as impacted habitat.

(4) Northern California (mouth of San Francisco Bay to Oregon border).

For mitigation activities that occur concurrent to the action resulting in damage to the existing eelgrass habitat, a starting ratio of 4.82 to 1 (transplant area to vegetated cover impact area) should be recommended based on a 75 percent failure rate over the past 25 years (4 transplant actions). That is, for each square meter of eelgrass habitat adversely impacted, 4.82 square meters of new habitat with suitable conditions to support eelgrass should be planted with a comparable bottom coverage and eelgrass density as impacted habitat.

### b) *Impacts to Density of Eelgrass Beds*

Degradation of existing eelgrass habitat that results in a permanent reduction of eelgrass turion density greater than 25 percent, and that is a statistically significant difference from pre-impact density, should be mitigated based on an equivalent area basis. The 25 percent and statistically significant threshold is believed reasonable based on supporting information (Fonseca *et al.* 1998, WDFW 2008), and professional practice under SCEMP. In these cases, eelgrass remains present at the action site, but density may be potentially affected by long-term chronic or intermittent effects of the action. Reduction of density should be determined to have occurred when the mean turion density of the impact site is found to be statistically different ( $\alpha=0.10$  and  $\beta=0.10$ ) from the density of a reference and at least 25 percent below the reference mean during two annual sampling events following implementation of an action. The number of samples taken to describe density at each site (*e.g.*, impact and reference) should be sufficient to provide for appropriate statistical power. For small impact areas that do not allow for a sample size that provides statistical power, alternative methods for pre- and post- density comparisons could be considered. Mitigation for reduction of turion density without change in eelgrass habitat area should be on a one-for-one basis either by augmenting eelgrass density at the impact site or by establishing new eelgrass habitat comparable to the change in density at the impact site. For example, a 25 percent reduction in density of 100-square meters (100 turions/square meter) of eelgrass habitat to 75 turions/square meter should be mitigated by the establishing 25 square meters of new eelgrass habitat with a density at or above the 100 turions/square meter pre-impact density.

### 3. Mitigation Technique

In-kind mitigation technique should be determined on a case-by-case basis. Techniques for eelgrass mitigation should be consistent with the best available technology at the time of mitigation implementation and should be tailored to the specific needs of the mitigation site. Eelgrass transplants have been highly successful in southern and central California, but have had mixed results in San Francisco Bay and northern California. Bare-root bundles and seed buoys have been utilized with some mixed success in northern portions of the state. Transplants using frames have also been used with some limited success. For transplants in southern California, plantings consisting of bare-root bundles consisting of 8-12 individual turions each have proven to be most successful (Merkel 1988).

Donor material should be taken from the area of direct impact whenever practical, unless the action resulted in reduced density of eelgrass at the area of impact. Site selections should consider the similarity of physical environments between the donor site and the transplant receiver site and should also consider the size, stability, and history of the donor site (*e.g.*, how long has it persisted and is it a transplant site). Plants harvested should be taken in a manner to thin an existing bed without leaving any noticeable bare areas. For all geographic areas, no more than 10 percent of an existing donor bed should be harvested for transplanting purposes. Ten percent is reasonable based on recommendations in Thom *et al.* (2008) and professional practice under SCEMP. Harvesting of flowering shoots for seed buoy techniques should occur only from widely separated plants.

It is important for action agencies to note that state laws and regulations affect the harvesting and transplantation of donor plants and permission from the state, where required, should be obtained; for example, California Department of Fish and Wildlife may need to provide written authorization for harvesting and transplanting donor plants and/or flowering shoots.

#### 4. Mitigation Plan

NMFS should recommend that a mitigation plan be developed for in-kind mitigation efforts. During consultation, NMFS biologists should request that mitigation plans be provided at least 60 days prior to initiation of project activities to allow for NMFS review. When feasible, mitigation plans should be developed based on preliminary or pre-project eelgrass surveys. When there is uncertainty regarding whether impacts to eelgrass will occur, and the need for mitigation is based on comparison of pre- and post-project eelgrass surveys, NMFS biologists should request that the mitigation plan be provided no more than 60 days following the post-project survey to allow for NMFS review and minimize any delay in mitigation implementation.

At a minimum, the mitigation plan should include:

- Description of the project area
- Results of preliminary eelgrass survey and pre/post-project eelgrass surveys if available (see Section II.B.1 and II.B.2)
- Description of projected and/or documented eelgrass impacts
- Description of proposed mitigation site and reference site(s) (see Section II.B.4)
- Description of proposed mitigation methods (see Section II.F.3)
- Construction schedule, including specific starting and ending dates for all work including mitigation activities. (see Section II.F.5)
- Schedule and description of proposed post-project monitoring and when results will be provided to NMFS
- Schedule and description of process for continued coordination with NMFS through mitigation implementation
- Description of alternative contingent mitigation or adaptive management should proposed mitigation fail to achieve performance measures (see Section II.F.6)

#### 5. Mitigation Timing

Mitigation should commence within 135 days following the initiation of the in-water construction resulting in impact to the eelgrass habitat, such that mitigation commences within the same eelgrass growing season as impacts occur. If possible, mitigation should be initiated prior to or concurrent with impacts. For impacts initiated within 90 days prior to, or during, the low-growth period for the region, mitigation may be delayed to within 30 days after the start of the following growing season, or 90 days following impacts, whichever is longer, without the need for additional mitigation as described below. This timing avoids survey completion during the low growth season, when results may misrepresent progress towards performance milestones.

Delays in eelgrass mitigation result in delays in ultimate reestablishment of eelgrass habitat functions, increasing the duration and magnitude of project impacts to eelgrass. To offset loss of eelgrass habitat function that accumulates through delay, an increase in successful eelgrass



mitigation is needed to achieve the same compensatory habitat function. Because habitat function is accumulated over time once the mitigation habitat is in place, the longer the delay in initiation of mitigation, the greater the additional habitat area needed (i.e., mitigation ratio increasingly greater than 1.2:1) to offset losses. Unless a specific delay is authorized or dictated by the initial schedule of work, federal action agencies should determine whether delays in mitigation initiation in excess of 135 days warrant an increased final mitigation ratio. If increased mitigation ratios are warranted, NMFS should recommend higher mitigation ratios (see Attachment 7). Where delayed implementation is authorized by the action agency, the increased mitigation ratio may be determined by utilizing the Wetlands Mitigation Calculator (King and Price 2004) with an appropriate value for parameter D (See Attachment 4). Examples of delay multipliers generated using the Wetlands Mitigation Calculator are provided in Attachment 5.

Conversely, implementing mitigation ahead of impacts can be used to reduce the mitigation needs by achieving replacement of eelgrass function and services ahead of eelgrass losses. If eelgrass is successfully transplanted three years ahead of impacts, the mitigation ratio would drop from 1.2:1 to 1:1. If mitigation is completed less than three years ahead of impacts, the mitigation calculator can be used to determine the appropriate intermediate mitigation ratio.

## 6. Mitigation Monitoring and Performance Milestones

In order to document progress and persistence of eelgrass habitat at the mitigation site through and beyond the initial establishment period, which generally is three years, monitoring should be completed for a period of five years at both the mitigation site and at an appropriate reference site(s) (Section II.B.4. Reference Site Selection). Monitoring at a reference site(s) may account for any natural changes or fluctuations in habitat area or density. Monitoring should determine the area of eelgrass and density of plants at 0, 12, 24, 36, 48, and 60 months after completing the mitigation. These intervals will provide yearly updates on the establishment and persistence of eelgrass during the growing season. These monitoring recommendations are consistent with findings of the National Research Council (NRC 2001), the Corps requirements for compensatory mitigation (33 CFR 332.6(b)), and other regional resource policies (Corps 2010, Evans and Leschen 2010, SFWMD 2007).

All monitoring work should be conducted during the active eelgrass growth period and should avoid the recognized low growth season for the region to the maximum extent practicable (typically November through February for southern California, November through March for central California, November through March for San Francisco Bay, and October through April for northern California). Sufficient flexibility in the scheduling of the 6 month surveys should be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60-month period may be warranted in those instances where the stability of the proposed mitigation site is questionable, where the performance of the habitat relative to reference sites is erratic, or where other factors may influence the long-term success of mitigation. Mitigation plans should include a monitoring schedule that indicates when each of the monitoring events will be completed.

The monitoring and performance milestones described below are included as eelgrass transplant success criteria in the SCEMP. These numbers represent milestones and associated timelines

typical of successful eelgrass habitat development based on NMFS' experience with: (1) conducting eelgrass surveys and monitoring and (2) reviewing mitigation monitoring results for projects implemented under SCEMP. Restored eelgrass habitat is expected to develop through an initial 3 year monitoring period such that, within 36 months following planting, it meets or exceeds the full coverage and not less than 85 percent of the density relative to the initial condition of affected eelgrass habitat. Restored eelgrass habitat is expected to sustain this condition for at least 2 additional years.

Monitoring events should evaluate the following performance milestones:

Month 0 – Monitoring should confirm the full coverage distribution of planting units over the initial mitigation site as appropriate to the geographic region.

Month 6 – Persistence and growth of eelgrass within the initial mitigation area should be confirmed, and there should be a survival of at least 50 percent of the initial planting units with well-distributed coverage over the initial mitigation site. For seed buoys, there should be demonstrated recruitment of seedlings at a density of not less than one seedling per four (4) square meters with a distribution over the extent of the initial planting area. The timing of this monitoring event should be flexible to ensure work is completed during the active growth period.

Month 12–The mitigation site should achieve a minimum of 40 percent coverage of eelgrass and 20 percent density of reference site(s) over not less than 1.2 times the area of the impact site.

Month 24–The mitigation site should achieve a minimum of 85 percent coverage of eelgrass and 70 percent density of reference site(s) over not less than 1.2 times the area of the impact site.

Month 36–The mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site.

Month 48–The mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site.

Month 60–The mitigation site should achieve a minimum of 100 percent coverage of eelgrass and 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site.

Performance milestones may be re-evaluated or modified if declines at a mitigation site are also demonstrated at the reference site, and therefore, may be a result of natural environmental stressors that are unrelated to the intrinsic suitability of the mitigation site. In the EFH consultation context, NMFS should provide recommendations regarding modification of performance milestones as technical assistance during interagency coordination as described in

the mitigation plan or as EFH Conservation Recommendations if the federal action agency re-initiates EFH consultation.

## 7. Mitigation Reporting

NMFS biologists should request monitoring reports and spatial data for each monitoring event in both hard copy and electronic version, to be provided within 30 days after the completion of each monitoring period to allow timely review and feedback from NMFS. These reports should clearly identify the action, the action party, mitigation consultants, relevant points of contact, and any relevant permits. The size of permitted eelgrass impact estimates, actual eelgrass impacts, and eelgrass mitigation needs should be identified, as should appropriate information describing the location of activities. The report should include a detailed description of eelgrass habitat survey methods, donor harvest methods and transplant methods used. The reports should also document mitigation performance milestone progress (see II.F.6. Mitigation Monitoring and Performance Milestones). The first report (for the 0-month post-planting monitoring) should document any variances from the mitigation plan, document the sources of donor materials, and document the full area of planting. The final mitigation monitoring report should provide the action agency and NMFS with an overall assessment of the performance of the eelgrass mitigation site relative to natural variability of the reference site to evaluate if mitigation responsibilities were met. An example summary is provided in Attachment 3.

## 8. Supplemental Mitigation

Where development of the eelgrass habitat at the mitigation site falls short of achieving performance milestones during any interim survey, the monitoring period should be extended and supplemental mitigation may be recommended to ensure that adequate mitigation is achieved. In the EFH consultation context, NMFS should provide recommendations regarding extended monitoring as technical assistance during interagency coordination as described in the mitigation plan or as EFH Conservation Recommendations if the federal action agency re-initiates EFH consultation. In some instances, an adaptive management corrective action to the existing mitigation area may be appropriate. In the event of a mitigation failure, the action agency should convene a meeting with the action party, NMFS, and applicable regulatory and/or resource agencies to review the specific circumstances and develop a solution to achieve no net loss in eelgrass habitat function.

As indicated previously, while in-kind mitigation is preferred, the most appropriate form of compensatory mitigation should be determined on a case-by-case basis. In cases where it is demonstrated that in-kind replacement is infeasible, out-of-kind mitigation may be appropriate over completion of additional in-kind mitigation. The determination that an out-of-kind mitigation is appropriate will be made by NMFS, the action agency, and the applicable regulatory agencies, where a regulatory action is involved.

## G. Special Circumstances

Depending on the circumstances of each individual project, NMFS may make recommendations different from those described above on a case by case basis. For the scenarios described below,

for example, NMFS could recommend a mitigation ratio of 1:1 or for use of out-of-kind mitigation. Because NMFS needs a proper understanding of eelgrass habitat in the project area and potential impacts of the proposed project to evaluate the full effects of authorized activities, NMFS should not make recommendations that diverge from these guidelines if they would result in surveys, assessments or reports inferior to those which might be obtained through the guidance in Section II. The area thresholds described below are taken from the SCEMP and/or reflect recommendations NMFS staff have repeatedly made during individual EFH consultations. These thresholds minimize impacts to eelgrass habitat quality and quantity, based on NMFS' experience with: (1) conducting eelgrass surveys and monitoring and (2) reviewing project monitoring results for projects implemented under SCEMP. The special circumstance included for shellfish aquaculture longlines is supported by Rumrill and Poulton (2004) and the NMFS Office of Aquaculture.

#### 1. Localized Temporary Impacts

NMFS may consider modified target mitigation ratios for localized temporary impacts wherein the damage results in impacts of less than 100 square meters and eelgrass habitat is fully restored within the damage footprint within one year of the initial impact (e.g., placement of temporary recreational facilities, shading by construction equipment, or damage sustained through vessel groundings or environmental clean-up operations). In such cases, the 1.2:1 mitigation ratio should not apply, and a 1:1 ratio of impact to recovery would apply. A monitoring program consisting of a pre-construction eelgrass survey and three post-construction eelgrass surveys at the impact site and appropriate reference site(s) should be completed in order to demonstrate the temporary nature of the impacts. NMFS should recommend that surveys be completed as follows: 1) the first post-construction eelgrass survey should be completed within 30 days following completion of construction to evaluate direct effects of construction, 2) the second and third post-construction surveys should be performed approximately one year after the first post-construction survey, and approximately two years after the first post-construction survey, respectively, during the appropriate growing season to confirm no indirect, or longer term effects resulted from construction. A compelling reason should be demonstrated before any reduced monitoring and reporting recommendations are made.

#### 2. Localized Permanent Impacts

a) If both NMFS and the authorizing action agencies concur, the compensatory mitigation elements of this policy may not be necessary for the placement of a single pipeline, cable, or other similar utility line across existing eelgrass habitat with an impact corridor of no more than 1 meter wide. NMFS should recommend the completion of pre- and post-action surveys as described in section II.B. and II.D. The actual area of impact should be determined from the post-action survey. NMFS should recommend the completion of an additional survey (after 1 year) to ensure that the action or impacts attributable to the action have not exceeded the 1-meter corridor width. NMFS should recommend that, if the post-action or 1 year survey demonstrates a loss of eelgrass habitat greater than the 1-meter wide corridor, mitigation should be undertaken.

b) ) If both NMFS and the authorizing action agencies concur that the spacing of shellfish aquaculture longlines does not result in a measurable net loss of eelgrass habitat in the project

area, then mitigation associated with local losses under longlines may not be necessary. NMFS should recommend the completion of pre- and post-action surveys as described in section II.B. and II.D. NMFS should recommend the completion of additional post-action monitoring surveys (to be completed approximately 1 year and 2 years following implementation of the action) to ensure that the action or impacts attributable to the action have not resulted in net adverse impacts to eelgrass habitat. NMFS should recommend that, if the 1-year or 2-year survey demonstrates measurable impact to eelgrass habitat, mitigation should be undertaken. c) NMFS should consider mitigation on a 1:1 basis for impacts less than 10 square meters to eelgrass patches where impacts are limited to small portions of well-established eelgrass habitat or eelgrass habitat that, despite highly variable conditions, generally retain extensive eelgrass, even during poor years. A reduced mitigation ratio should not be considered where impacts would occur to isolated or small eelgrass habitat areas within which the impacted area constitutes more than 1% of the eelgrass habitat in the local area during poor years.

c) If NMFS concurs and suitable out-of-kind mitigation is proposed, compensatory mitigation may not be necessary for actions impacting less than 10 square meters of eelgrass.

### III. Glossary of Terms

Except where otherwise specified, the explanations of the following terms are provided for informational purposes only and are described solely for the purposes of this policy; where a NMFS statute, regulation, or agreement requires a different understanding of the relevant term, that understanding of the term will supplant these explanations provided below.

Compensatory mitigation – restoration, establishment, or enhancement of aquatic resources for the purposes of offsetting unavoidable authorized adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Ecosystem – a geographically specified system of organisms, the environment, and the processes that control its dynamics. Humans are an integral part of an ecosystem.

Ecosystem function – ecological role or process provided by a given ecosystem.

Ecosystem services – contributions that a biological community and its habitat provide to the physical and mental well-being of the human population (*e.g.*, recreational and commercial opportunities, aesthetic benefits, flood regulation).

Eelgrass habitat – areas of vegetated eelgrass cover (any eelgrass within 1 square meter quadrat and within 1 m of another shoot) bounded by a 5 m wide perimeter of unvegetated area

Essential fish habitat (EFH) – EFH is defined in the MSA as “...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

EFH Assessment – An assessment as further explained in 50 C.F.R. § 600.920(e).

EFH Consultation – The process explained in 50 C.F.R. § 600.920

EFH Conservation Recommendation – provided by the National Marine Fisheries Service (NMFS) to a federal or state agency pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act regarding measures that can be taken by that agency to conserve EFH. As further explained in 50 C.F.R. § 600.925, EFH Conservation Recommendations may be provided as part of an EFH consultation with a federal agency, or may be provided by NMFS to any federal or state agency whose actions would adversely affect EFH .

Habitat – environment in which an organism(s) lives, including everything that surrounds and affects its life, including biological, chemical and physical processes.

Habitat function – ecological role or process provided by a given habitat (e.g., primary production, cover, food, shoreline protection, oxygenates water and sediments, etc.).

In lieu fee program – a program involving the restoration, establishment, and/or enhancement of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation needs; an in lieu fee program works like a mitigation bank, however, fees to compensate for impacts to habitat function are collected prior to establishing an on-the-ground conservation/restoration project.

In-kind mitigation – mitigation where the adverse impacts to a habitat are mitigated through the creation, restoration, or enhancement of the same type of habitat.

Mitigation – action or project undertaken to offset impacts to an existing natural resource.

Mitigation bank – a parcel of land containing natural resource functions/values that are conserved, restored, created and managed in perpetuity and used to offset unavoidable impacts to comparable resource functions/values occurring elsewhere. The resource functions/values contained within the bank are translated into quantified credits that may be sold by the banker to parties that need to compensate for the adverse effects of their activities.

Out-of-kind mitigation – mitigation where the adverse impacts to one habitat type are mitigated through the creation, restoration, or enhancement of another habitat type

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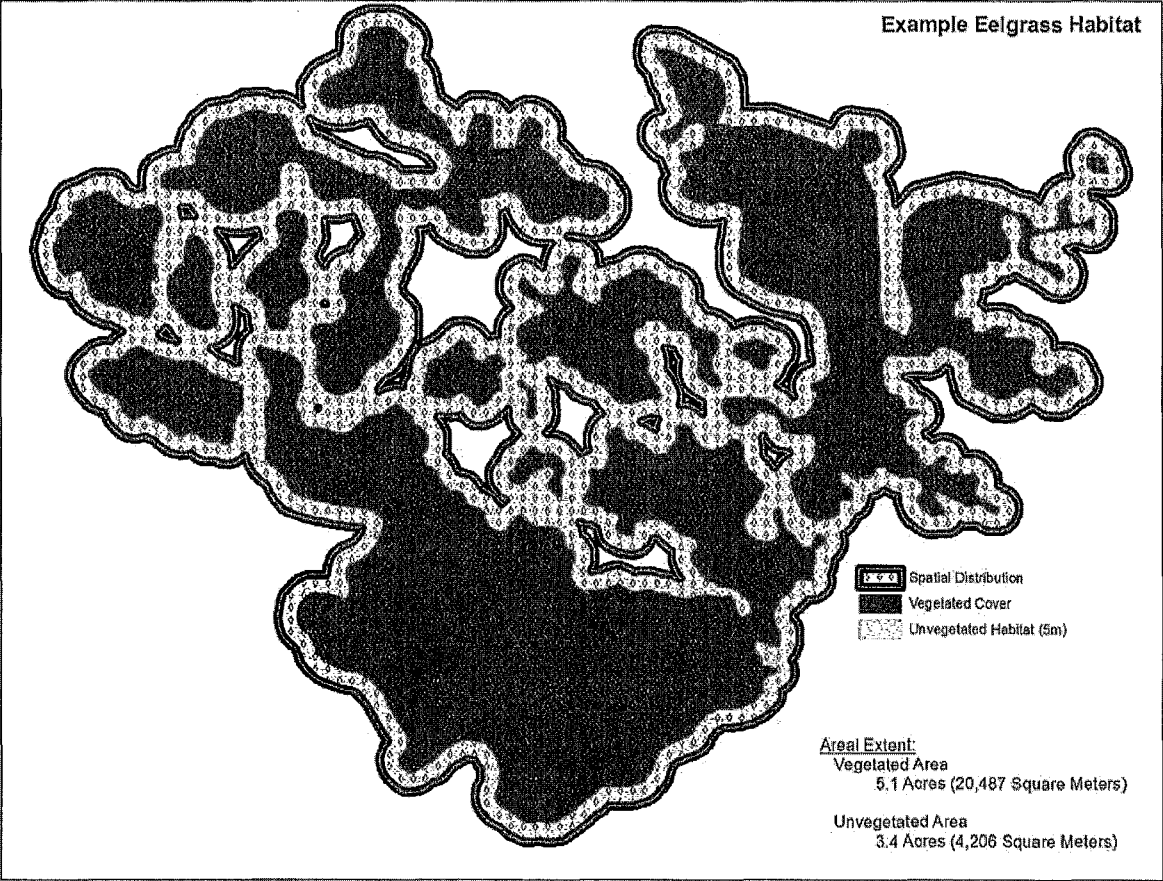
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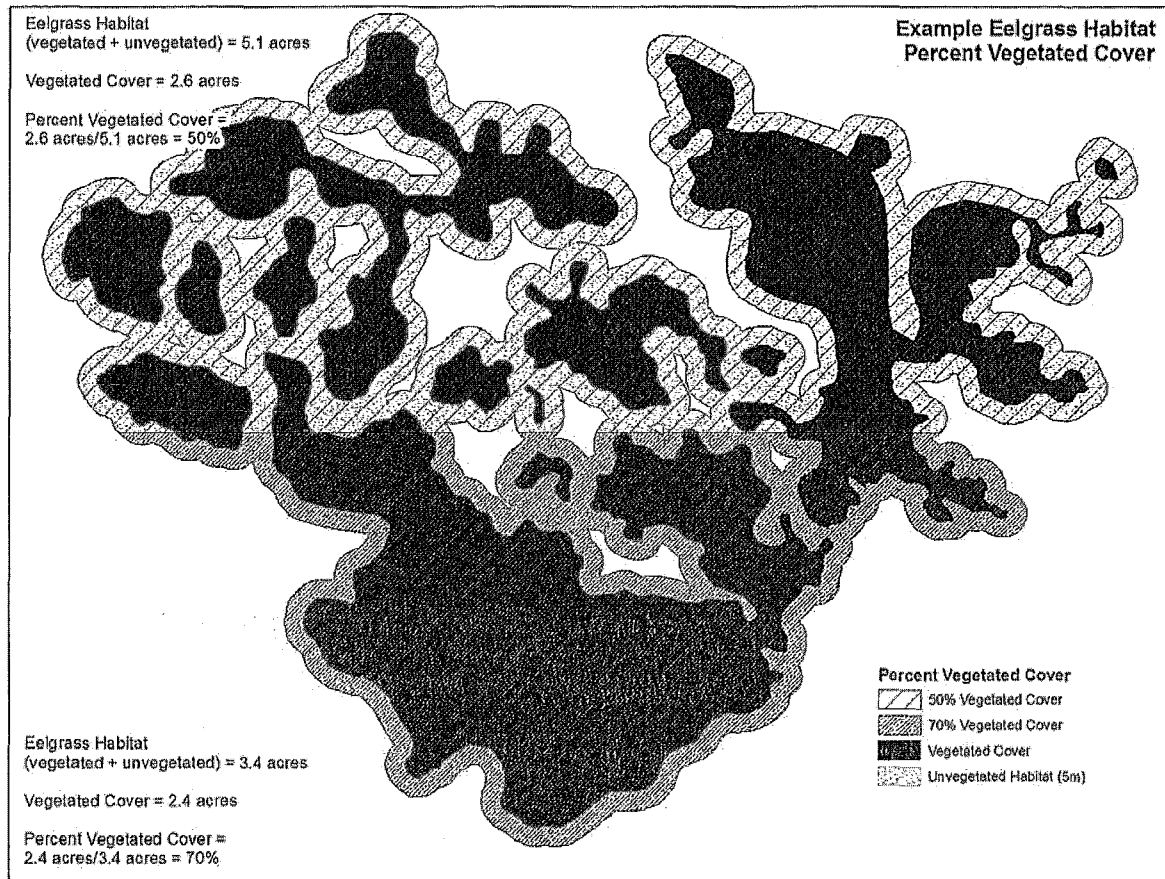


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**ATTACHMENT 1. Graphic depiction of eelgrass habitat definition including spatial distribution and aerial coverage of vegetated cover and unvegetated eelgrass habitat.**

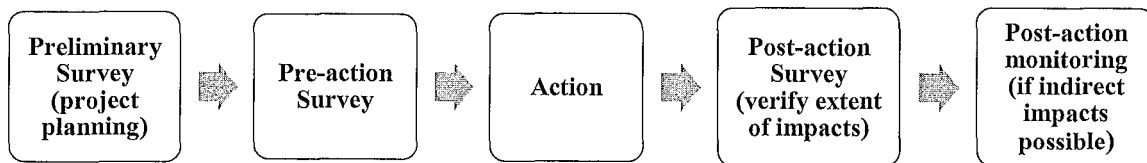


## ATTACHMENT 2. Example Eelgrass Habitat Percent Vegetated Cover.



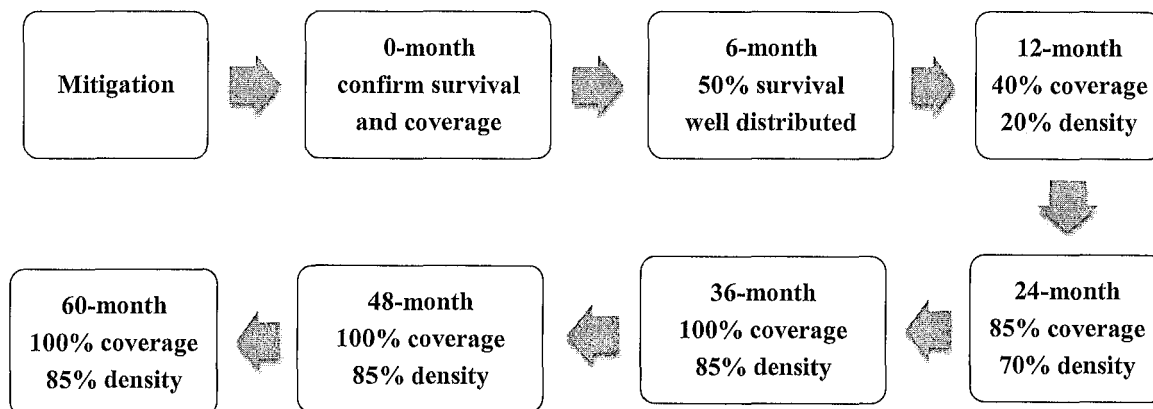
**ATTACHMENT 3. Flow chart depicting timing of surveys and monitoring.**

a) Eelgrass impact surveys



- All surveys should be completed during the growing season
- Surveys should be completed at the impact site and an appropriate reference site(s)
- A preliminary survey completed for planning purposes may be completed a year or more in advance of the action.
- Pre-action and post-action surveys should be completed within 60 days of the action.
- A survey is good for 60 days, or if that 60 day period extends beyond the end of growing season, until start of next growing season
- Two years of monitoring following the initial post-action monitoring event may be needed to verify lack or extent of indirect effects.
- Survey reports should be provided to NMFS and the federal action agency within 30 days of completion of each survey event

b) Eelgrass mitigation monitoring



- Mitigation should occur coincident or prior to the action
- All monitoring should be completed during the growing season
- Performance metrics for each monitoring event are compared to the 1.2:1 mitigation ratio
- Monitoring reports should be provided to NMFS and the federal action agency 30 days of completion of each monitoring event
- NMFS and action agency will evaluate if performance metrics met, and decide if supplemental mitigation or other adaptive management measures are needed

**ATTACHMENT 4. Eelgrass transplant monitoring report.**

In order to ensure that NMFS is aware of the status of eelgrass transplants, action agencies should provide or ensure that NMFS is provided a monitoring report summary with each monitoring report. For illustrative purposes only, an example of a monitoring report summary is provided below.

**ACTION PARTY CONTACT INFORMATION:**

Action Name (same as permit reference):
---

*(a) Action party Information*

Name	Address
Contact Name	City, State, Zip
Phone	Fax
Email	

**MITIGATION CONSULTANT**

Name	Address
Contact Name	City, State, Zip
Phone	Fax
Email	

**PERMIT DATA:**

Permit	Issuance Date	Expiration Date	Agency Contact

**EELGRASS IMPACT AND MITIGATION NEEDS SUMMARY:**

Permitted Eelgrass Impact Estimate (m <sup>2</sup> ):	
Actual Eelgrass Impact (m <sup>2</sup> ):	On (post-construction date):
Eelgrass Mitigation Needs (m <sup>2</sup> ):	Mitigation Plan Reference:
Impact Site Location:	
Impact Site Center Coordinates (actionion &	

datum):	
Mitigation Site Location:	
Mitigation Site Center Coordinates (actionion & datum):	

**ACTION ACTIVITY DATA:**

Activity	Start Date	End Date	Reference Information
Eelgrass Impact			
Installation of Eelgrass Mitigation			
Initiation of Mitigation Monitoring			

**MITIGATION STATUS DATA:**

	Mitigation Milestone	Scheduled Survey	Survey Date	Eelgrass Habitat Area (m <sup>2</sup> )	Bottom Coverage (Percent)	Eelgrass Density (turions/m <sup>2</sup> )	Reference Information
<b>Month</b>	0						
	6						
	12						
	24						
	36						
	48						
	60						

**FINAL ASSESSMENT:**

<b>Was mitigation met?</b>	
<b>Were mitigation and monitoring performed timely?</b>	
<b>Were mitigation delay increases needed or were supplemental mitigation programs necessary?</b>	

## ATTACHMENT 5. Wetlands mitigation calculator formula and parameters.

Starting mitigation ratios for each region within California were calculated using “The Five-Step Wetland Mitigation Ratio Calculator” (King and Price 2004) developed for NMFS Office of Habitat Conservation. The discrete time equation this method uses to solve for the appropriate mitigation ratio is as follows:

$$R = \frac{\sum_{t=0}^{T_{\max}} (1+r)^{-t}}{(B(1-E)(1+L)-A) \left[ \sum_{t=D}^{C-D-1} \frac{(t+D)}{C(1+r)^t} + \sum_{t=C-D}^{T_{\max}} (1+r)^{-t} \right] + \left[ \sum_{t=D}^{T_{\max}} \frac{1-(1-k)^{(t+D)}}{(1+r)^{(t+D)}} \right]} (A(1+L))$$

The calculator parameters in the above equation and values used to calculate starting mitigation ratios for CEMP are as follows:

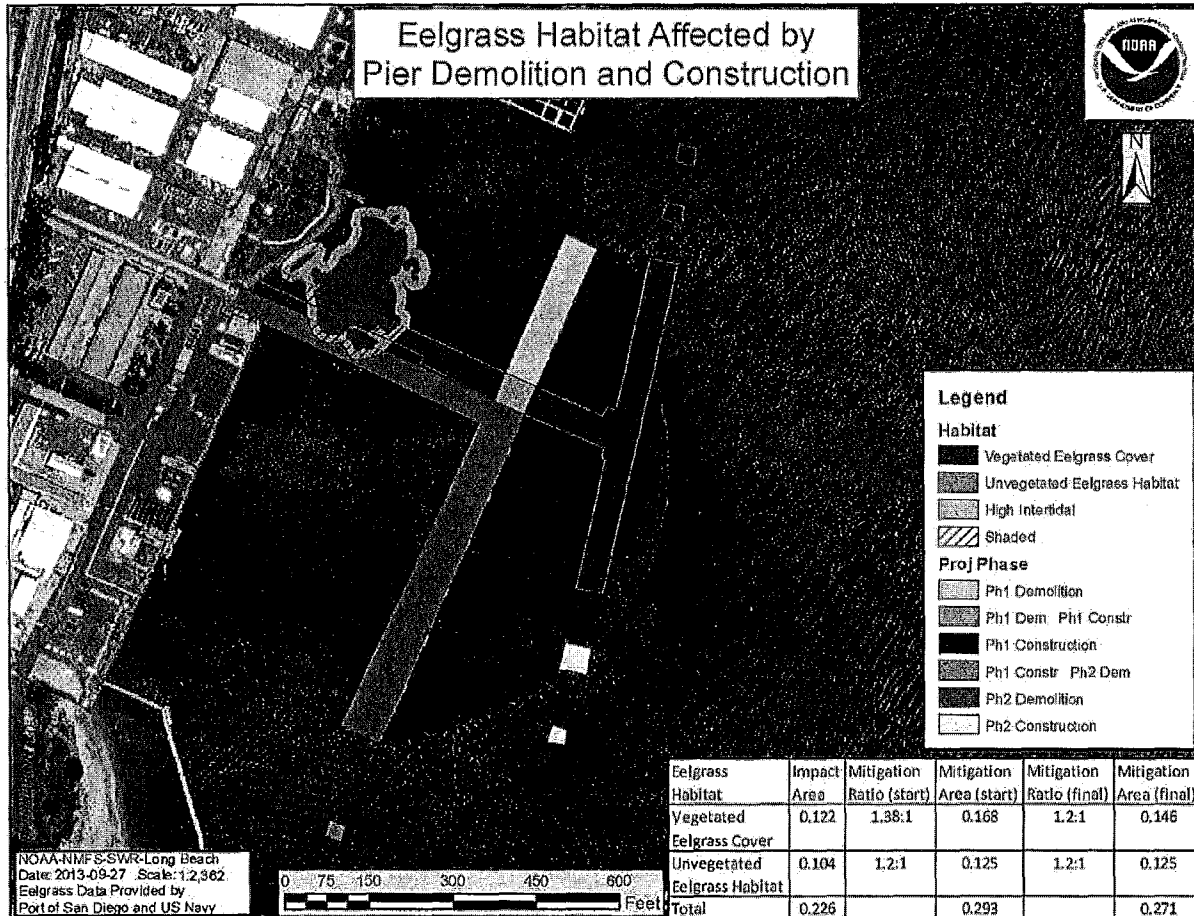
Symbol	Calculator Parameter	Value
A	The level of habitat function provided at the mitigation site prior to the mitigation project	0%
B	The maximum level of habitat function that mitigation is expected to attain, if it is successful	100%
C	The number of years after construction that the mitigation project is expected to achieve maximum function	3 yrs
D	The number of years before destruction of the impacted wetland that the mitigation project begins to generate habitat function	0 yrs
E	The percent likelihood that the mitigation project will fail and provide none of the anticipated benefits	various*
L	The percent difference in expected habitat function based on differences in landscape context of the mitigation site when compared with the impacted wetland	0%
k	The percent likelihood that the mitigation site, in the absence purchase or easement would be developed in any future year	0%
r	The discount rate used for comparing gains and losses that accrue at different times in terms of their present value	3%**
Tmax	The time horizon used in the analysis (chosen to maintain 1.2:1 ratio at E=100% and other parameter values listed above).	13 yrs

\* The value for E was based on regional history of success in eelgrass mitigation and varied between regions (see Attachment X).

\*\* NOAA suggests the use of a 3 percent real discount rate for discounting interim service losses and restoration gains, unless a different proxy for the social rate of time preference is more appropriate. (NOAA-DARP 1999) We use this value here, because it is based on best available information and is consistent with the NOAA Damage Assessment and Restoration Program.

**ATTACHMENT 6. Example calculations for application of starting and final mitigation ratios for impacts to eelgrass habitat in southern California.**

In this example, a pier demolition and construction would impact 0.122 acres of vegetated eelgrass habitat (dark green) and 0.104 acres of unvegetated habitat (pink). Area of impact is indicated by purple hatch mark. Application of recommended starting mitigation ratio for southern California (1.38:1) and final mitigation ratio (1.2:1) to compute starting and final mitigation area for this example are shown in the table.





**ATTACHMENT 7. Example mitigation area multipliers for delay in initiation of mitigation activities.**

Delays in eelgrass transplantation result in delays in ultimate reestablishment of eelgrass habitat values, increasing the duration and magnitude of project effects to eelgrass. The delay multipliers in the table below have been generated by altering the implementation start time within “The Five-Step Wetland Mitigation Ratio Calculator” (King and Price 2004).

<b>MONTHS POST-IMPACT</b>	<b>DELAY MULTIPLIER (Percent of Initial Mitigation Area Needed)</b>
0-3 mo	100%
4-6 mo	107%
7-12 mo	117%
13-18 mo	127%
19-24 mo.	138%
25-30 mo.	150%
31-36 mo	163%
37-42 mo.	176%
43-48 mo.	190%
49-54 mo.	206%
55-60 mo.	222%



# NOAA FISHERIES

## ATTACHMENT 8. Summary of Eelgrass Transplant Actions in California

*See table starting next page.*

## SUMMARY OF EELGRASS (*ZOSTERA MARINA*) TRANSPLANT PROJECTS IN CALIFORNIA

No.	Region	System	Location	Year	Size*	Type**	Consistent with Permit Conditions	Success Status***	Net Result****
<b>Southern California Eelgrass Restoration History</b>									
	Southern	San Diego Bay	North Island	1976	<0.1	SP	yes	no	-
	Southern	San Diego Bay	"Delta" Beach	1977	1.6	SP	yes	partial	-
	Southern	San Diego Bay	North Island	1978	<0.1	SP	yes	yes	+
	Southern	Newport Bay	Carnation Cove	1978	<0.1	SP	no	no	-
	Southern	Newport Bay	West Jetty	1980	<0.1	SP	yes	partial	0
	Southern	Mission Bay	multiple beaches	1982	<0.1	SP	no	partial	0
	Southern	LA/LB Harbor	Cabrillo Beach	1985	<0.1	BR	yes	yes	+
	Southern	Alamitos Bay	Peninsula	1985	<0.1	BR	yes	yes	+
	Southern	Huntington Hbr.	Main Channel	1985	<0.1	BR	yes	no	0
	Southern	Newport Bay	Upper	1985	<0.1	BR	yes	no	0
	Southern	Mission Bay	Sail Bay	1986	2.7	BR	yes	yes	+
	Southern	San Diego Bay	NEMS 1	1987	3.8	BR	no	yes	+
	Southern	San Diego Bay	Chula Vista Wildlife Reserve	1987	<0.1	BR	yes	no	+ <sup>1</sup>
	Southern	San Diego Bay	Harbor Island	1988	0.1	BR	yes	yes	+
	Southern	Huntington Harbour	Entrance Channel	1989	0.1	BR	no	yes	+
	Southern	San Diego Bay	Le Meridien Hotel	1990	<0.1	BR	yes	yes	+
	Southern	San Diego Bay	Embarcadero	1991	<0.1	BR	yes	yes	+ <sup>2</sup>
	Southern	Mission Bay	Sea World Lagoon	1991	<0.1	BR	yes	yes	+
	Southern	San Diego Bay	Loew's Marina	1991	<0.1	BR	yes	yes	+
	Southern	San Diego Bay	NEMS 2	1993	<0.1	BR	yes	yes	+
	Southern	San Diego Bay	Sea Grant Study	1993	<0.1	BR	yes	yes	+
	Southern	Agua Hedionda Lagoon	Outer Lagoon	1993	<0.1	BR	yes	yes	+
	Southern	San Diego Bay	NEMS 5	1994	0.4	BR	yes	yes	+
	Southern	Mission Bay	South Shores Basin	1994	2.9	BR	yes	yes	+
	Southern	Talbert Marsh	Talbert Channel	1995	<0.1	BR	na	yes	+ <sup>4</sup>
	Southern	Mission Bay	various sites	1995	4.8	BR	yes	yes	+
	Southern	Mission Bay	Ventura Cove <sup>5</sup>	1996	0.5	BR	yes	yes	+ <sup>6</sup>
	Southern	Mission Bay	Santa Clara Cove	1996	<0.1	BR	yes	no	0 <sup>10</sup>
	Southern	Mission Bay	West Mission Bay Drive Bridge	1996	<0.1	BR	no	yes	0 <sup>10</sup>
	Southern	Mission Bay	De Anza Cove	1996	<0.1	BR	yes	yes	+
	Southern	Batiquitos Lagoon	all basins	1997	21.6 <sup>7</sup>	BR	yes	yes	+ <sup>4</sup>
	Southern	San Diego Bay	NEMS 5	1997	7.1	BR	yes	yes	+
	Southern	San Diego Bay	Convair Lagoon	1998	2.5	BR	yes	no	- <sup>12</sup>
	Southern	San Diego Bay	NEMS 6	1999	0.3	BR	yes	yes	+
	Southern	Aqua Hedionda	Bristol Cove	1999	0.3	BR	yes	yes	+
	Southern	Aqua Hedionda	Middle Lagoon and Inner Lagoon	1999	4	BR	yes	yes	+
	Southern	Newport Bay	Balboa Is. Grand Canal	1999	<0.1	BR	yes	yes	+
	Southern	Mission Bay	West Ski Island	2001	0.2	BR	yes	yes	+

No.	Region	System	Location	Year	Size*	Type**	Consistent with Permit Conditions	Success Status***	Net Result****
	Southern	San Diego Bay	Expanded NEMS 6	2001	0.6	BR	yes	yes	+
	Southern	Newport Bay	USCG Corona del Mar	2002	<0.1	BR	yes	yes	+
	Southern	Huntington Harbour	Sunset Bay	2002	<0.1	BR	yes	yes	+
	Southern	San Diego Bay	Navy Enhancement Is.	2002	1	BR	yes	yes	+
	Southern	San Diego Bay	Coronado Bay Bridge	2003	0.3	BR	no	no	0
	Southern	LA Harbor	P300 Expansion Area	2003	5.9	BR	yes	partial	- <sup>9</sup>
	Southern	Newport Bay	Newport Bay Channel Dredging	2004	0.4	BR	yes	no	-
	Southern	San Diego Bay	South Bay Borrow Pit	2004	4.2	BR	yes	yes	pending <sup>8</sup>
	Southern	San Diego Bay	USCG ATC Pier	2004	0.1	BR	yes	yes	+
	Southern	San Diego Bay	South Bay Borrow Pit Sup.	2006	4.2	BR	yes	yes	pending <sup>8</sup>
	Southern	San Diego Bay	D Street Marsh	2006	0.3	BR	yes	pending	pending
	Southern	LA Harbor	P300 Supplement	2007	0.8	BR	yes	yes	pending
	Southern	San Diego Bay	Glorietta Bay Shoreline Park	2007	0.2	BR	yes	yes	pending
	Southern	Bolsa Chica	Pilot Eelgrass Restoration	2007	0.5	BR	yes	yes	+ <sup>4</sup>
	Southern	San Diego Bay	Borrow Pit Supplement	2007	4.2	BR	yes	yes	pending <sup>8</sup>
	Southern	San Diego Bay	Sweetwater Silvergate Frac-out	2008	<0.1	BR	yes	yes	0 <sup>11</sup>
	Southern	San Diego Bay	Harbor Drive Bridge/NTC Channel	2009	<0.1	BR	yes	pending	pending
<b>Southern California Eelgrass Success Rate (1989-2009, Last 20 Years)</b>								<b>87%</b>	<b>n=43</b>
<b>Central California Eelgrass Restoration History</b>									
	Central	Morro Bay	Anchorage Area	1985	<0.1	BR	no	yes	+
	Central	Morro Bay	Target Rock	1997	<0.1	BR	no	yes	+
	Central	Morro Bay	Morro Bay Launch Ramp	2000	<0.1	BR	yes	yes	+
	Central	Morro Bay	Mooring Area A1	2002	0.3	BR	yes	yes	+
	Central	Morro Bay	Western Shoal	2010	0.8	BR	yes	pending	pending
<b>Central California Eelgrass Success Rate (1985-2009, Inadequate History to Exclude Older Projects)</b>								<b>100%</b>	<b>n=4</b>
<b>San Francisco Bay Eelgrass Restoration History</b>									
	San Francisco Bay	San Francisco Bay	Richmond Training Wall	1985	<0.1	BR	NA	no	NA <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Keil Cove and Paradise Cove	1989	0.1	Plugs	NA	partial	NA <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Bayfarm Island/Middle Harbor Shoal	1998	0.1	BR and Plugs	NA	partial	NA <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Bayfarm Island	1999	0.1	BR	NA	partial	NA <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Brickyard Cove, Berkeley	2002	0.2	BR	yes	yes	+ <sup>15</sup>
	San Francisco Bay	San Francisco Bay	Emeryville Shoals	2002	0.1	Mixed Test	NA	no	NA <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Marin CDay, R&GC, Audubon	2006	0.6	Seed Bouy	NA	partial	pending <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Marin CDay, R&GC, Audubon	2006	<0.1	mod. TERFS	NA	partial	pending <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Marin CDay, R&GC, Audubon	2006	<0.1	Seeding	NA	no	NA <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Clipper Yacht Harbor, Sausalito	2007	<0.1	Frames	yes	pending	pending
	San Francisco Bay	San Francisco Bay	Albany, Emeryville, San Rafael	2007	<0.1	BR	NA	partial	pending <sup>4</sup>
	San Francisco Bay	San Francisco Bay	Belvedere	2008	<0.1	Frames	yes	pending	pending
<b>San Francisco Bay Eelgrass Success Rate (1985-2009, Inadequate History to Exclude Older Projects)</b>								<b>40%</b>	<b>n=10</b>

No.	Region	System	Location	Year	Size*	Type**	Consistent with Permit Conditions	Success Status***	Net Result****
<b>Northern California Eelgrass Restoration History</b>									
	Northern	Humboldt Bay	Indian Island	1982	unknown	BR	unknown	no	-
	Northern	Bodega Harbor	Spud Point Marina	1984	1.3	BR	yes	no	-
	Northern	Humboldt Bay	Indian Island	1986	<0.1	BR	yes	no	-
	Northern	Humboldt Bay		1986	0.2	unknown	unknown	no	-
	Northern	Humboldt Bay	SR255 Bridge	2004	<0.1	BR	yes	no	-
	Northern	Humboldt Bay	Maintenance Dredging Project	2005	<0.1	BR	yes	yes	+
<b>Northern California Eelgrass Success Rate (1982-2009, Inadequate History to Exclude Older Projects)</b>								<b>25%</b>	<b>n=4</b>

\* size in hectares

SP = sediment laden plug

\*\* BR = bare root

\*\*\* success status is measured as yes, no, partial, pending, or unknown. Success rate is reported as percentage of successful over total completed within the past 25 years. yes = 1, partial = 0.5, no = 0, and pending or unknown are not counted in either the numerator or denominator in determining success percentage.

\*\*\*\* +/- = net increase in eelgrass coverage, 0 = no change in eelgrass coverage, - = net decrease in eelgrass coverage

1 Transplant was initially adversely impacted by an unknown source of sediment and was deemed unsuitable.

2 The transplant declined initially and later recovered from what was determined to be a one time sedimentation event.

3 Transplant was experimental due to dense beds of the exotic mussel *Mytilus senhousia*

which inhibited the growth of the transplant. Replacement transplant done elsewhere.

Transplant was completed in an area deemed unsuitable. Insufficient coverage required the construction of a remedial site.

Monitoring continues at both the initial and remedial sites.

4 Transplant was experimental.

5 Multiple sites.

6 Mitigation for marina at Princess Resort, project not built

7 Amount of eelgrass present within all basins as of 2000 mapping.

8 Regional eelgrass decline has resulted in die-offs both within restoration and reference areas equally full recovery had not occurred at the time of evaluation, yet project exceeds control-corrected reqt.

9 Original site was constructed as a plateau that was underfilled and anticipated to fall short of objectives. A supplemental

transplant was therefore completed when development began to exhibit shortfalls in area.

10 Shortfall mitigated by withdraw from established eelgrass mitigation bank.

11 Exception conditions from SCEMP requiring only replacement in place for unanticipated damage

12 Mitigated out-of-kind with non-eelgrass to satisfy permit requirements after shortfall in eelgrass mitigation.

**APPENDIX H**  
**PHOTOGRAPIC SURVEY**

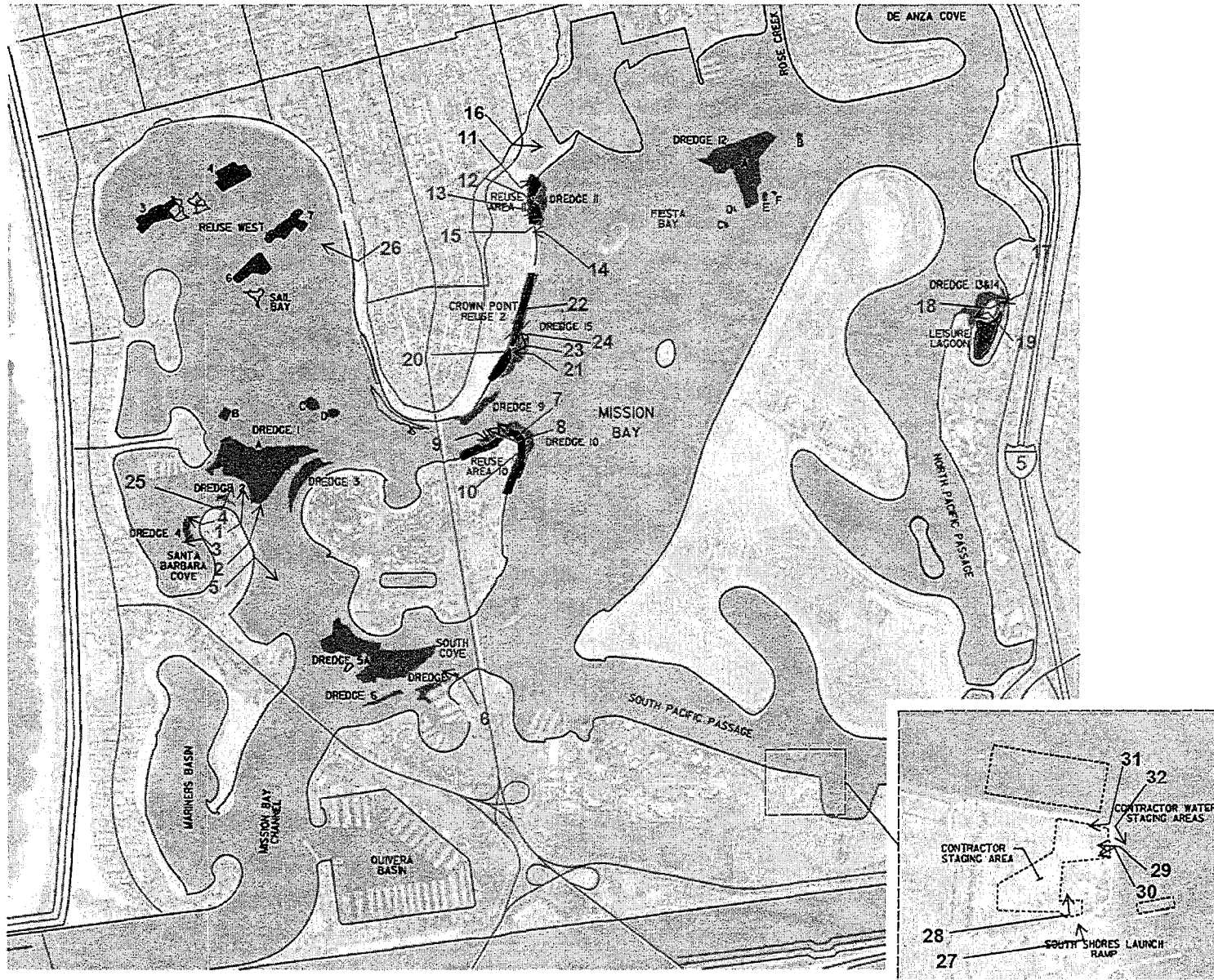
**Photographic Survey of  
Mission Bay Navigational Safety Dredging  
Mission Bay Park, San Diego, California**



**Merkel & Associates, Inc.  
5434 Ruffin Road  
San Diego, CA 92123**

**December 2016**

### Photograph Locator Map





## DREDGE AREAS 1, 2, and 3 – BAHIA POINT AND EL CARMEL POINT



**Photograph 1.** View to the north into Sail Bay across Dredge Areas 1 and 2. Dredge areas are part of a delta at the channel widening as the bay opens into southern Sail Bay from the gap between Vacation Isle and Bahia Point. (11-18-16)



**Photograph 2.** View of Dredge Areas 1 and 3 looking northwest from Bahia Point at the northwestern tip of Vacation Isle. Note higher current ripples on water in a strong ebbing tide and exposed storm drain outlet on eroded bank (11-18-16).

### DREDGE AREA 4- BAHIA POINT



**Photograph 3.** View into Santa Barbara Cove looking west at Dredge Area 4 along the shoreline fringe. (11-18-16)



**Photograph 4.** View into Santa Barbara Cove looking northwest across Dredge Area 4 from Bahia Point. (11-18-16).

## DREDGE AREAS 5, 6, and 7 – MISSION BAY CHANNEL SHOALS



**Photograph 5.** View of Mission Bay Channel shoals at the southwest tip of Vacation Isle. The photo is taken from Bahia Point . (08-09-16).



**Photograph 6.** View to the northwest at the Mission Bay Channel shoals area. To the left side of the photo is the outermost dock within Dana Landing. Mission Bay Drive Bridge is to the left and the southwestern portion of Vacation Isle is on the right side of the photograph. The photo was taken from the northernmost parking area at Dana Landing. (11-18-16)

**DREDGE AREA 9 – SOUTH CROWN POINT SHORES/FISHERMAN’S CHANNEL**

**Photograph 7.** View to the north at southern Crown Point Shores looking from north Vacation Isle across Fisherman's Channel. Dredge Area 10 is on the southern margin of the channel and Dredge Area 9 is on the northern edge of the channel. The shallow shoals create an "S" curve through the channel resulting in considerable vessel grounding in this straits. (11-18-16)



**Photograph 8.** View to the northwest at southern Crown Point Shores looking from north Vacation Isle across Fisherman's Channel at the foot of the Ingraham Street Bridge. Dredge Area 10 is in the foreground and Dredge Area 9 is on the shallows of the opposite bank. (11-18-16)

## DREDGE AREA 10 – NORTHEAST VACATION ISLE/FISHERMAN’S CHANNEL



**Photograph 9.** View to the southeast at northeast Vacation Island. The shallow shoal is visible as quiescent water and lighter coloration extending out into Fishermen’s Channel. (03-19-16)



**Photograph 10.** View to the south along the trail at Northeast Vacation Isle. The scarp below the trail is a major source of sand in the shoal to be dredged and replace on the island shoreline (11-18-16).

**DREDGE AREA 11 – CROWN POINT SHORES**

**Photograph 11.** View to the northeast at the north end of Crown Point Shores adjacent to the Stribley Memorial Marsh. Sand at this site has accumulated around and over the existing access barrier fence resulting in lowering the effective fence height to as little as 3 feet in some areas. (08-09-16)



**Photograph 12.** View to the southeast towards Fiesta Bay. West Ski Island is on the left of the photo with FAA Island being located in the more distant background. The shoal area located in the central photograph is derived from a combination of storm drain discharge at this point and the angles of the bay that are affected by high speed vessel traffic on Fiesta Bay. The shoal extends well beyond the normal established shoreline safety zone and buoys are continuously moved outward to provide visual indicators of the shoal presence. (08-09-16).

### DREDGE AREA 11 – CROWN POINT SHORES

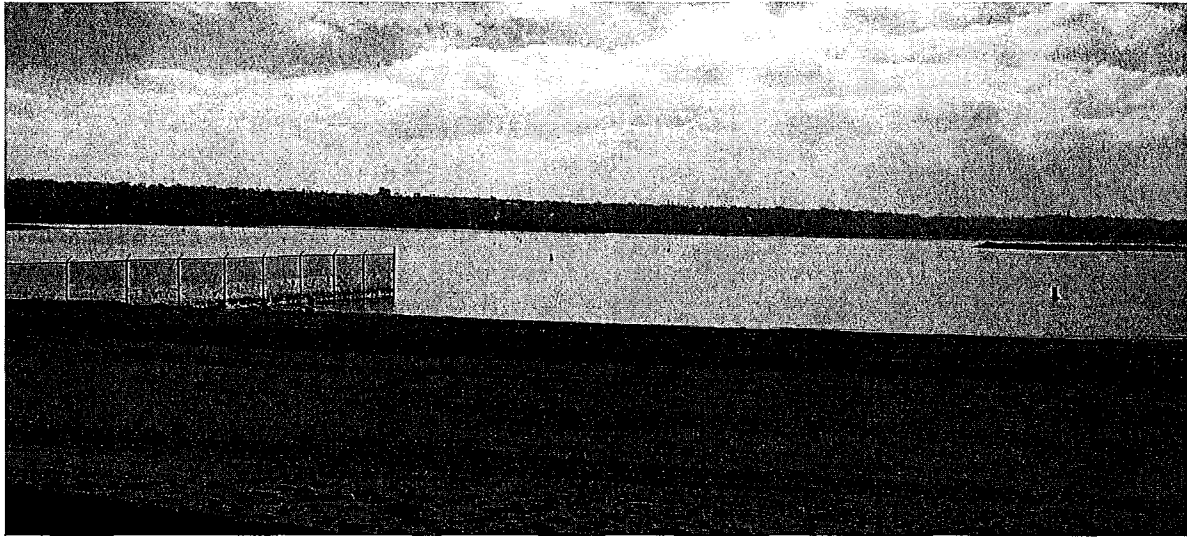


**Photograph 13.** View to the south at north Crown Point Shores. The prominent shoal extends to the left. People are standing on the remnants of an old asphalt launch ramp that has not been abandoned for many years. (08-09-16)



**Photograph 14.** View of the storm drain outlet on the high beach that is responsible for the majority of the beach shoal development at the northern end of Crown Point Shores. (08-09-16).

## DREDGE AREA 12 – NORTH FIESTA BAY



**Photograph 15.** View to the east of northern Fiesta Bay from north Crown Point Shores. On the right side of the photograph is West Ski Island. On the eastern boundary are lands and fences from the Northern Wildlife Preserve. (08-09-16)



**Photograph 16.** View of north Fiesta Bay where Dredge Area 12 occurs mid bay between the north end of Fiesta Island seen on the right margin of the photograph, De Anza Point in the left background, and the Northern Wildlife Preserve seen in the photograph foreground. The photo was taken from Crown Point Shores Drive. (11-18-16).



**DREDGE AREA 13-14/LEISURE LAGOON REUSE AREA – LEISURE LAGOON/ISLE**

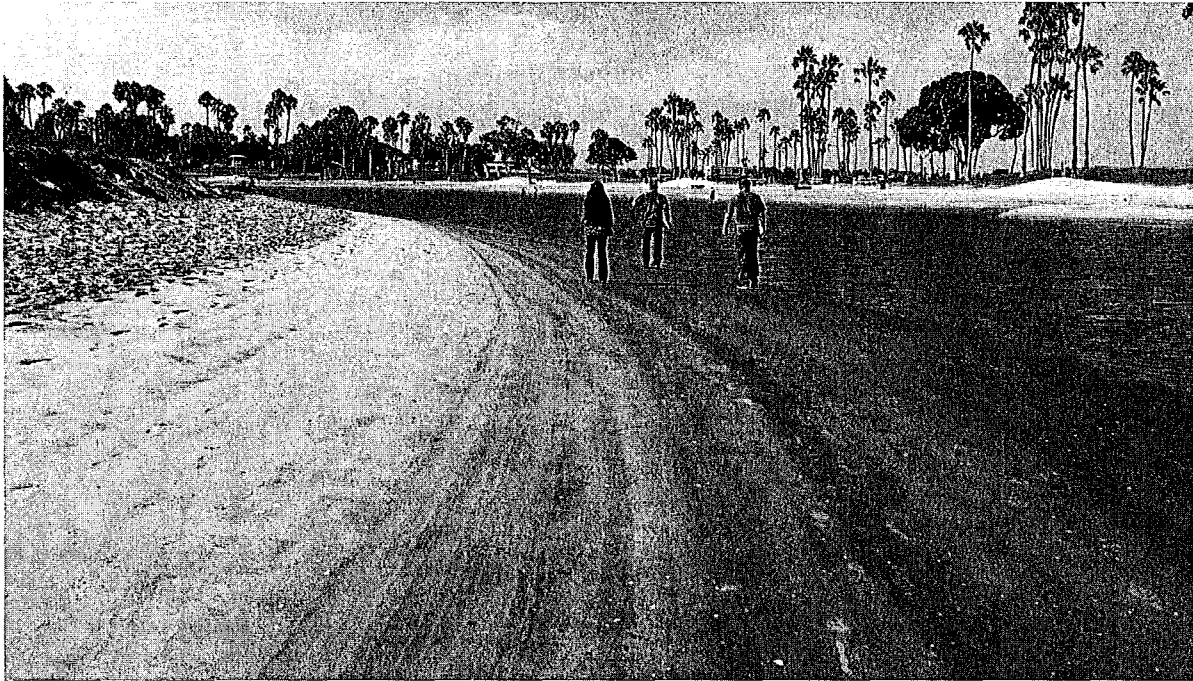


**Photograph 17.** View to the west along the sand bar that has formed between Leisure Isle and the eastern shoreline. The beach shoal is barely awash at high tides on the east and shallowly submerged on the west side of the island. (08-09-16)



**Photograph 18.** View to the east along the sand bar that has formed between Leisure Isle and the eastern shoreline. The beach shoal is awash at high tides on the east end. A 48-inch storm drain discharges into the lagoon just to the right of the photo. (08-09-16)

## DREDGE AREA 13-14/LEISURE LAGOON REUSE AREA – LEISURE LAGOON/ISLE

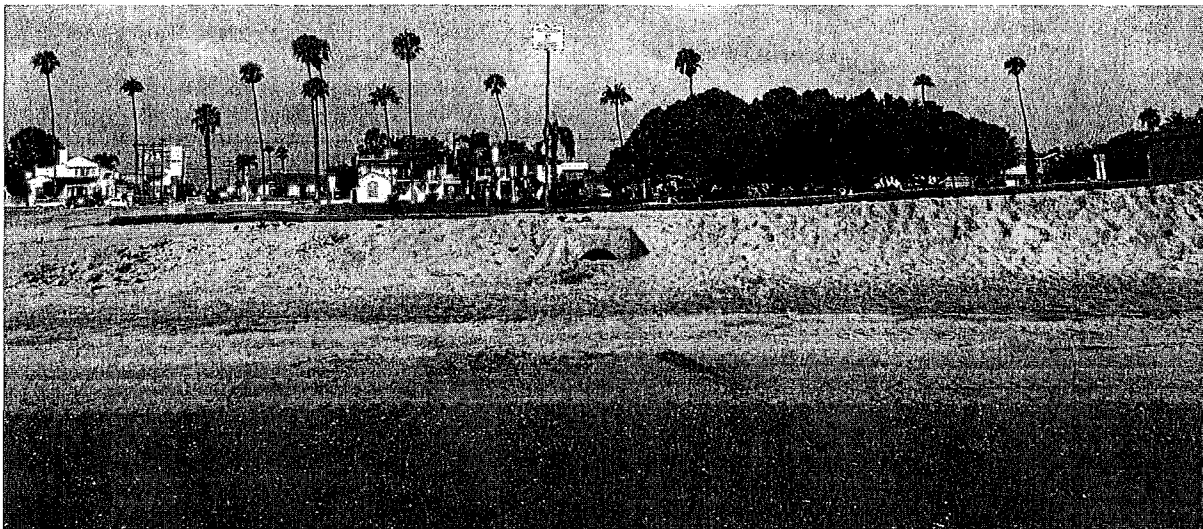


**Photograph 19.** View to the southwest from Leisure Isle looking into Leisure Lagoon. The shallow shoal to be dredged is visible as light water on the right side of the photograph. The dredged material would be placed to raise the deep basin floor within Leisure Lagoon to support eelgrass and improve water quality. (08-09-16)

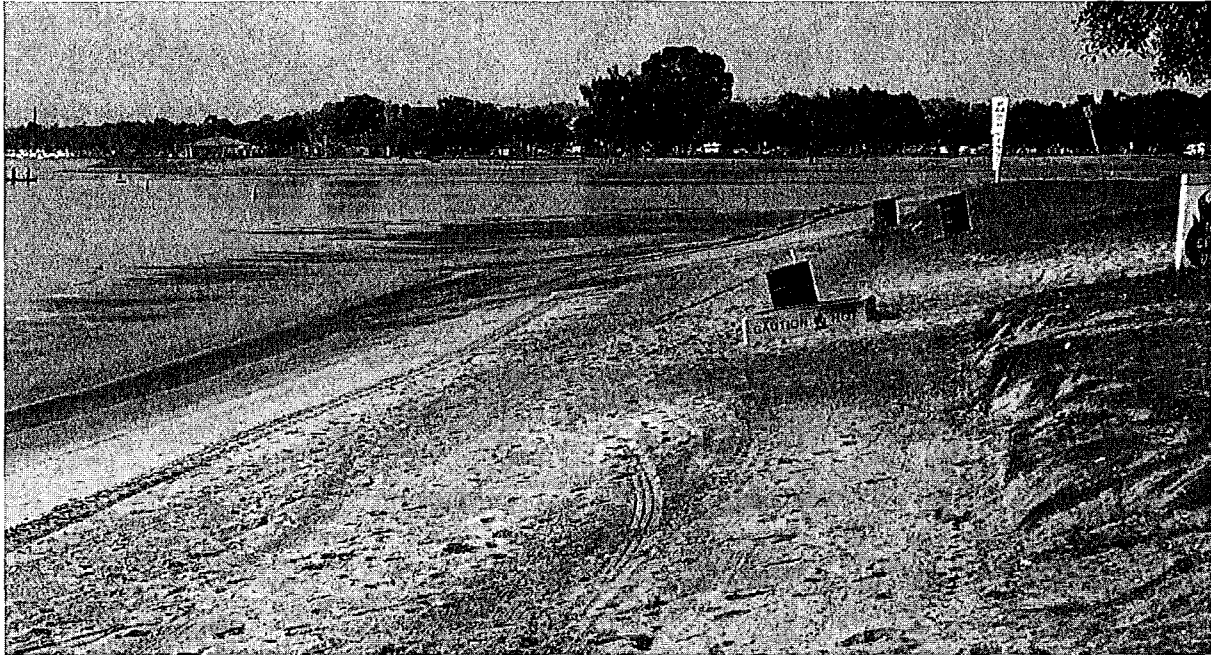
## DREDGE AREA 15/CROWN POINT 2 REUSE AREA – CROWN POINT SHORES



**Photograph 20.** View to the north along the beach scarp at the south end of Crown Point Shores. Storm water discharged from the headwall in the photograph forces littoral sand outward into a shallow shoal in Fiesta Bay. (08-09-16)



**Photograph 21.** View of storm drain that results in the large deltaic shoal when the drain flows. (08-09-16)

**DREDGE AREA 15/CROWN POINT 2 REUSE AREA – CROWN POINT SHORES**

**Photograph 22.** View to the south at Crown Point Shores where the sand shoal pushes outward at the storm drain into Fiesta Bay. The shoal can be seen at the water's edge. The shoal extends several feet further out just below the water surface. Because the area is a designated water ski take off and landing, grounding on the shallow shoal is common. (08-09-16)



**Photograph 23.** View to the north along Crown Point Shores at the water ski landing sign. The flair of the shoal away from the beach into the bay can be seen on the right side of the photograph. The shoal forming drain is located to the left of the photographer outside of photograph view. (08-09-16)

**DREDGE AREA 15/CROWN POINT 2 REUSE AREA – CROWN POINT SHORES**



**Photograph 24.** View to the north along Crown Point Shores illustrating the scarp at the upper edge of the sand deficit beach where littoral erosion has provided source sand for the shoal formation to the south of the photograph. (08-09-16)

## REUSE WEST SITES – SAIL BAY

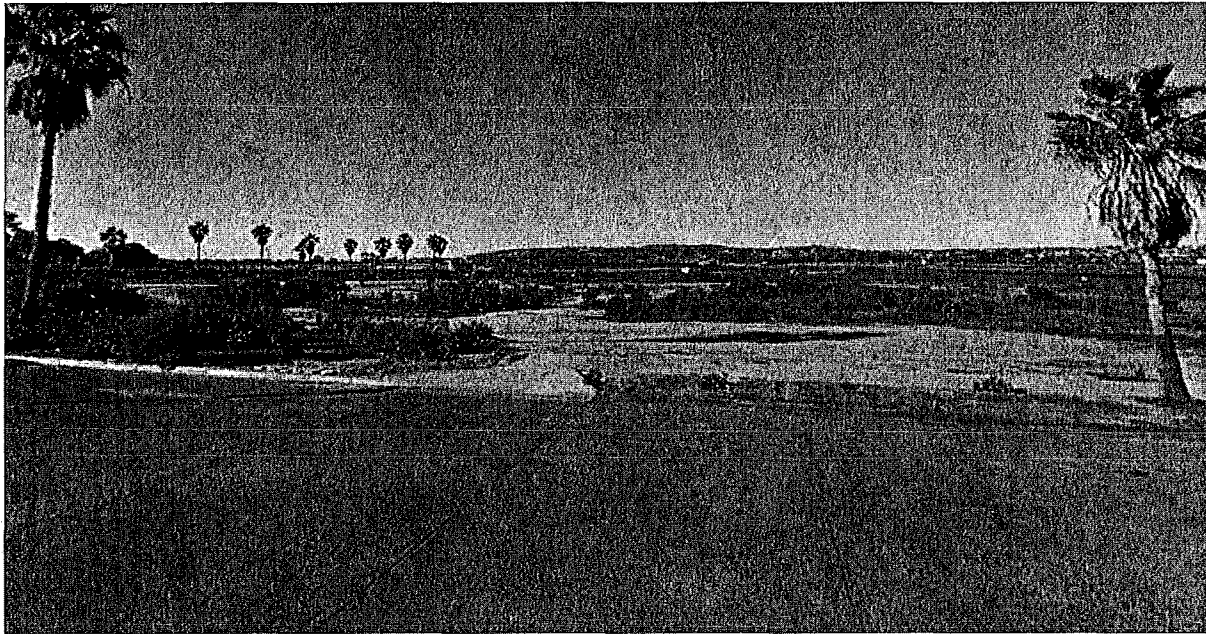


**Photograph 25.** View to the north from Bahia Point at Sail Bay. Reuse West Sites are in central Sail Bay within borrow sites in the bottom of the Bay. Photo looks over Dredge Areas 1 and 2 (11-18-16)

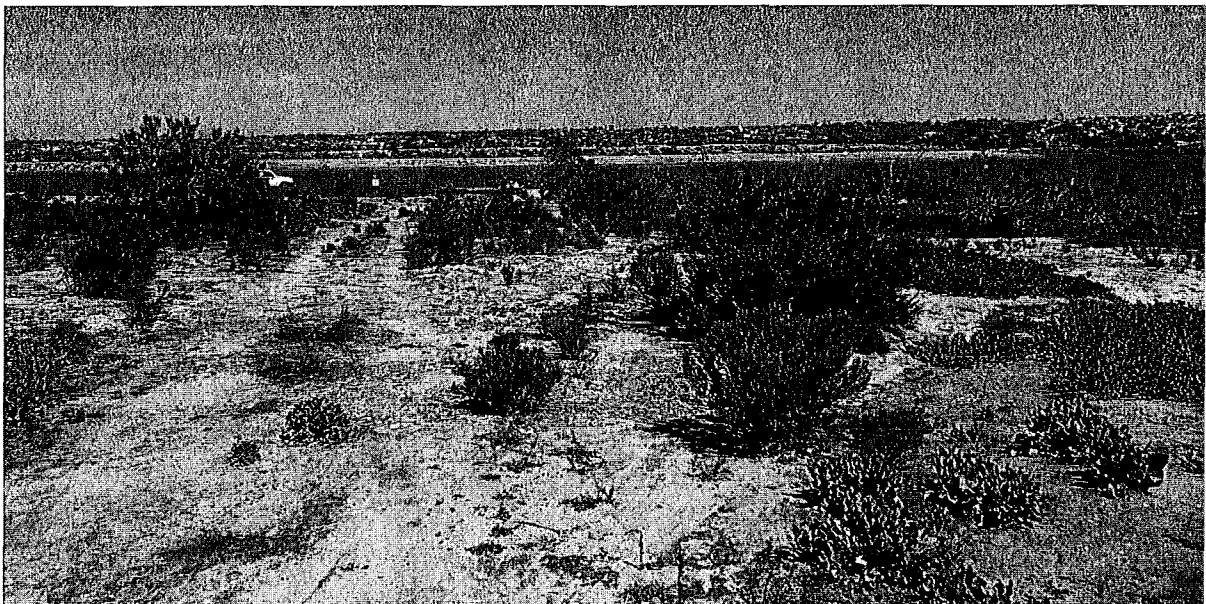


**Photograph 26.** View across Sail Bay from east to northwest. Reuse West Sites are located in dredged borrow pits in central Sail Bay that were excavated for sand supply in 1986 for the Sail Bay Improvements project. (11-18-16).

## CONTRACTOR STAGING AREA – SOUTH SHORES LAUNCH RAMP



**Photograph 27.** Access to Contractor staging area at South Shores Launch Ramp looking north-northwest onto the site. Access crosses an existing curb and start of public walkway. Fencing would be on the back side of the walkway leaving public access open.



**Photograph 28.** View to north along access into proposed Contractor staging area. Most plants are invasive ornamentals with a few scattered coyote bush. This area is disturbed lands .

### CONTRACTOR STAGING AREA – SOUTH SHORES LAUNCH RAMP



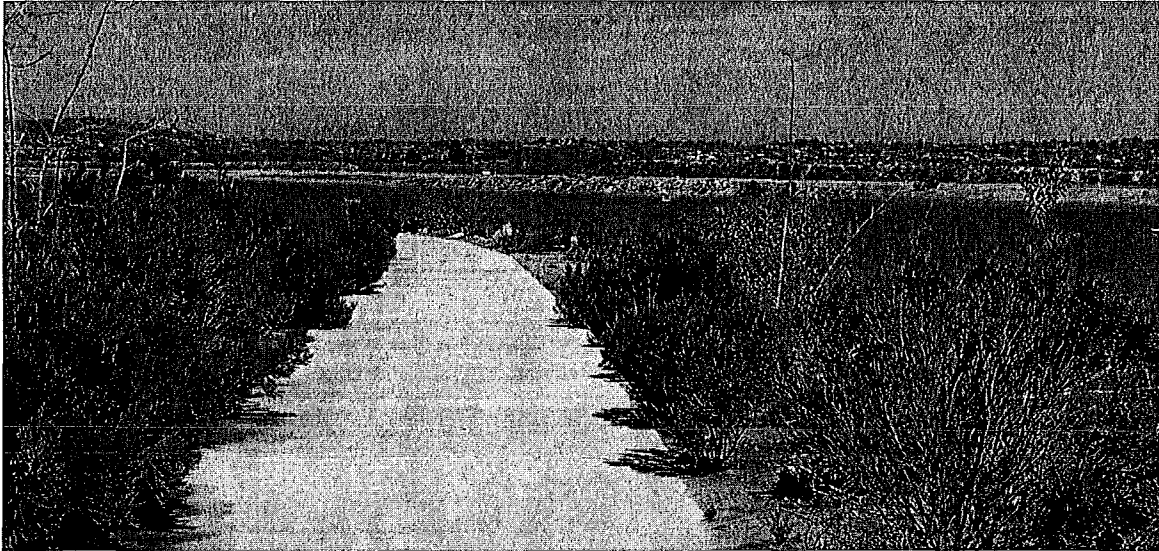
**Photograph 29.** Northeast corner of proposed Contractor staging area at South Shores Launch Ramp looking northwest over site. Access is within disturbed lands with a predominantly iceplant vegetation coverage. Disturbed sage scrub on the vacant pad is avoided by site layout.



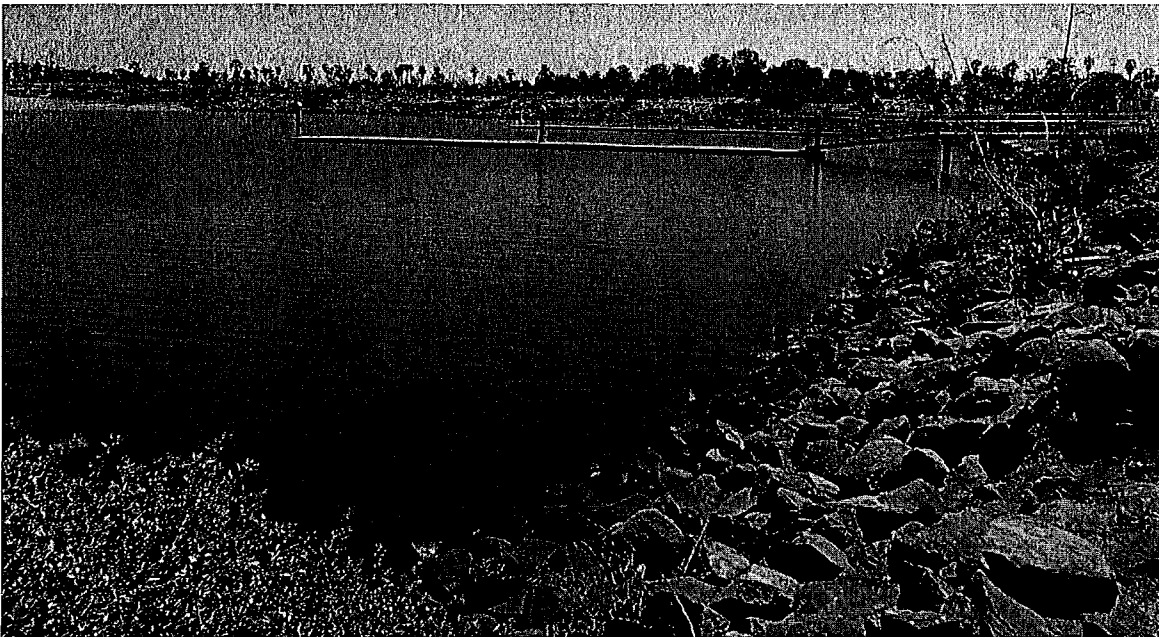
**Photograph 30.** Northeast corner of proposed Contractor staging area at South Shores Launch Ramp looking southeast over site.



### CONTRACTOR STAGING AREA – SOUTH SHORES LAUNCH RAMP



**Photograph 31.** View to northwest along public walkway that would remain open between offshore Contractor staging area and upland staging yard. Staging would be on the waters of South Pacific Passage to the north of this walkway area. Fiesta Island is in the background of the photo.



**Photograph 32.** View to south of in- water Contractor berthing for small vessels. Exclusive and overnight mooring is to be provided on north side of northern boarding float at South Shores Launch Ramp. This area has low public usage during the proposed construction window and no public exclusion of use is anticipated.

**APPENDIX I**

**MISSION BAY MAINTENANCE DREDGING PROGRAM, CHARACTERIZATION STUDY**

**REVISED**  
**MISSION BAY MAINTENANCE DREDGING PROGRAM**  
**DREDGED MATERIAL CHARACTERIZATION STUDY**

*Submitted to:*

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**Carlsbad Field Office**

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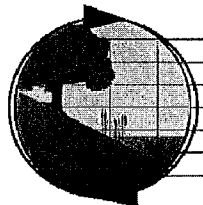
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*Merkel & Associates, Inc.*

April 2017

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## 1.0 INTRODUCTION

Sediment testing was completed in Spring 2015 (Merkel & Associates July 2015). Since that time, minor reduction in the dredge volumes, minor modification of dredge boundaries, and adjustments to the reuse areas have been made. To address these changes, the Corps of Engineers has requested the preparation and submittal of this revised sediment characterization report to the Corps and EPA.

Mission Bay is a recreational bay located in San Diego, California. Historically, Mission Bay was dominated by tidal mudflat, separated from the Pacific Ocean by a sand spit that is the location of the present day community of Mission Beach. As development progressed in coastal San Diego, a long process was initiated to dredge the mudflats, re-contour the shorelines, and convert Mission Bay into a generally subtidal recreational bay. The majority of work was completed by 1963; however, maintenance dredging and shoreline stabilization operations have continued in Mission Bay to present day.

Based on updated bathymetric and eelgrass surveys in 2013 (M&A 2013), fifteen primary areas within the bay were identified as requiring action in order to remove shoals that are causing navigation hazards (Figure 1). Eelgrass is present in most of these locations, and maintenance dredging would result in impacts to eelgrass that requires mitigation. In compliance with the California Eelgrass Mitigation Policy (CEMP) (NMFS 2014), eelgrass impacted by dredging activities would require successful eelgrass restoration at a 1.2:1 mitigation ratio with an initial restoration target of 1.38:1 in Southern California.

The purpose of this sediment characterization study is to evaluate sediments with respect to proposed sediment reuse options for dredged or excavated material. The goal is to achieve 100 percent sediment reuse in the development of required eelgrass mitigation and to restore the eroded beach areas from which some of the shoal material has been derived.

The tested sites, including design depths, and preliminary dredging volumes, are summarized in Table 1. Subsequent to testing, project refinements have been made that have eliminated two dredging areas that are analyzed in this report. These include Dredge Area 5B a small active shoal area just east of the West Mission Bay Drive (Glenn Rick Bridge), and Dredge Area 8 on west Crown Point Shores. The sandy shoal at Dredge Area 5B has been eroding and merging with Dredge Area 5A since 2013 this has lowered concerns and need for dredging in this area. Dredge Area 8 was determined to be a circumstance generated by erosion of the sand beach above native sediment of Crown Point. As a result, this area cannot be dredged as a maintenance dredging action, but rather should be refilled to shoreline, or dredged as a new dredge project. No action at this site is proposed within this project.

Based on the results of the sediment characterization study, dredged sediments will be placed within multiple disposal sites either located in Sail Bay (the west basin of Mission Bay) or at select receiver beaches. A series of disposal/reuse sites are deep borrow pits that were originally excavated for sandy material that was excavated and placed on the beaches of the bay as part of the Mission Bay Shoreline Stabilization Project nearly two decades ago. The borrow pits range in depth from approximately -12 to -20 feet MLLW and are currently too deep to support persistent eelgrass habitat. However, backfilling these pits with sediment dredged from the proposed maintenance dredging sites would raise bottom elevations and provide opportunity for subsequent eelgrass restoration.

It is anticipated that up to 220,850 cy of material (including an allowance for over dredge of up to 2 ft) will be dredged from the identified dredge areas. The majority of this material, approximately 188,800 cy is anticipated to be placed in the Sail Bay reuse areas. Up to 8,320 cy of material will be placed within Leisure Lagoon from Dredge Areas 13 and 14 to bring water depths up to an elevation capable of supporting eelgrass, and up to approximately 23,730 cy of material could be used for beach nourishment or in-bay reuse within the Sail Bay borrow pits. The Sail Bay borrow pits along with the Leisure Lagoon site will create approximately 12.8 acres of potential eelgrass restoration habitat at approximately -8 feet MLLW. Table 2 summarizes approximate volumes, dredge locations, and proposed reuse locations.

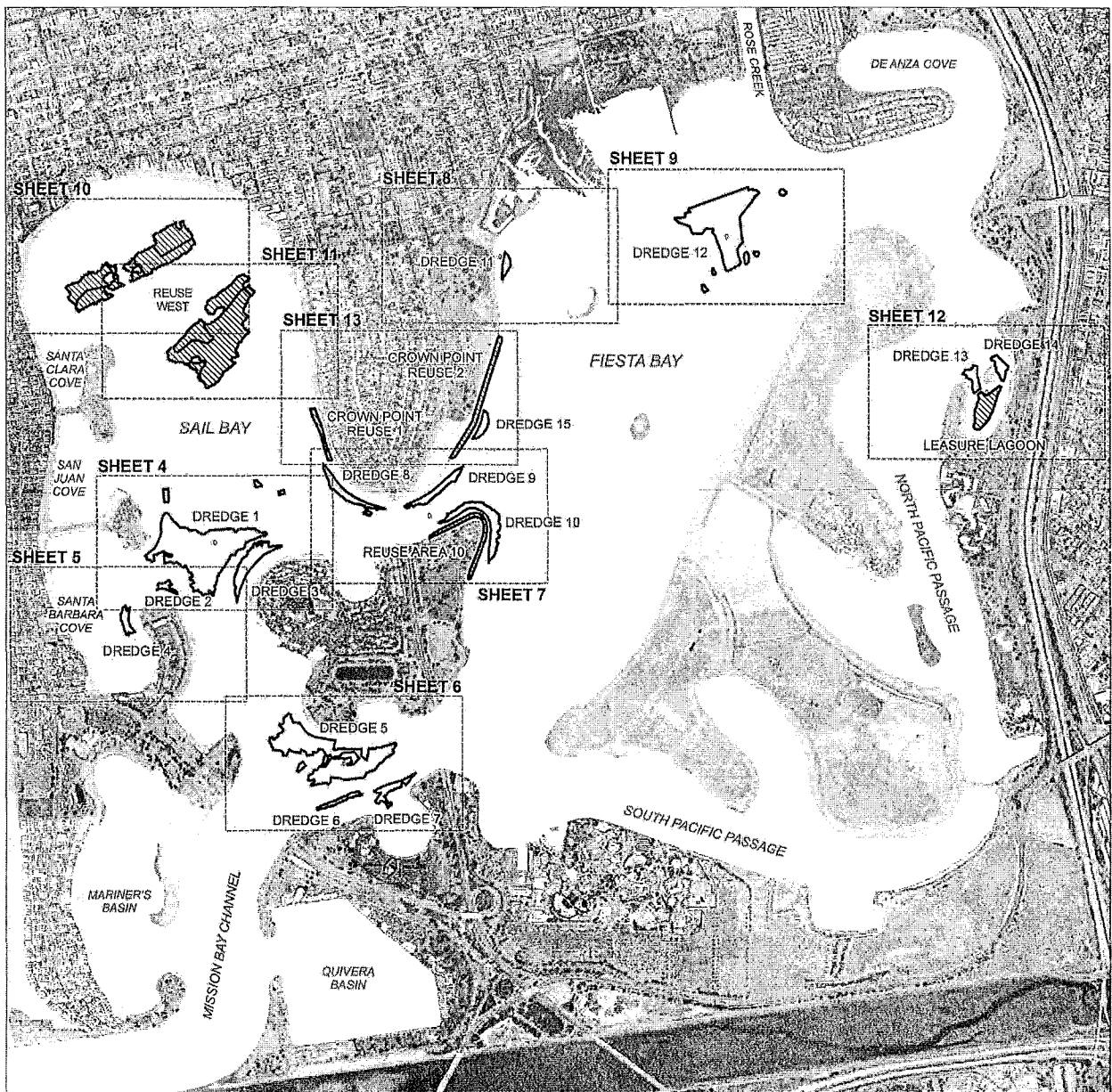


Figure 1. Proposed Maintenance Dredging and Beneficial Reuse Sites in Mission Bay.

**Table 1. Mission Bay Dredging Sites, Area, Design Depths, Estimated Volumes, and Eelgrass Impacts.**

Site	Area (Acres)	Existing Depth (ft MLLW)	Project Design Depth (ft MLLW)	Estimated Volume (cy) Project Depth	Estimated Volume (cy) with overdredge	Eelgrass Impact (Acres)
1A	16.4	-7	-8	22,690	48,290	15.87
1B	0.3	-7	-8	590	1,430	0.52
1C	0.1	-7	-8	720	1,740	0.63
1D	0.1	-7	-8	500	1,160	0.41
2	0.4	-7	-8	470	1,130	0.41
3	2.9	-7	-8	5,450	10,030	2.57
4	0.8	-7	-8	610	1,900	0.64
5A	12.1	-6	-8	19,850	41,630	13.30
5B	0.2	-7	-8	NO WORK	-	NO WORK
6	0.7	-6	-8	850	1,930	0.42
7	1.3	-7	-8	3,380	5,480	1.30
8	1.8	-2	-8	NO WORK	-	NO WORK
9	1.6	-2	-8	4,770	4,770	0.97
10	2.9	-2	-8*	15,300	15,300	2.01
11	0.6	-1	-8*	5,900	5,900	0.64
12A	11.4	-7	-8	22,890	59,820	0.99
12B	0.1	-7	-8	230	640	0.00
12C	0.1	-7	-8	190	540	0.06
12D	0.1	-7	-8	120	330	0.04
12E	0.2	-7	-8	380	1,060	0.04
12F	0.1	-7	-8	140	400	0.00
13	0.9	-2	-6*	4,020	4,020	0.48
14	0.8	-2	-6*	4,300	4,300	0.3
15	0.8	-2	-8*	9,050	9,050	1.31
<b>Total</b>	<b>56.6</b>			<b>122,400</b>	<b>220,850</b>	<b>42.93</b>

Notes: ft – feet; cy – cubic yards; MLLW – mean lower low water

\*Design depth varies down to depth presented as the site slopes down from beach

**Table 2. Summary of Proposed Dredge Sites, Disposal Locations, and Approximate Volume.**

Dredge Sites	Proposed Disposal Location	Approximate Volume (cy) without overdredge	Approximate Volume (cy) with overdredge
1, 2, 3, 4, 5, 6, 7, 9, 12	Sail Bay	90,350	188,800
13, 14	Leisure Lagoon	8,320	8,320
10, 11, 15	Beach and Sail Bay	23,730	23,730
	<b>Total</b>	<b>122,400</b>	<b>220,850</b>

Notes: cy – cubic yards

## 2.0 SAMPLE COLLECTION AND TESTING

Collection methodologies were consistent with the agency-approved SAP (M&A 2015) that detailed the sediment collection and testing program to be conducted on the proposed dredged material in accordance with the standard procedures outlined in: 1) Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. (Inland Testing Manual [ITM]) (USEPA/USACE 1998) and 2) Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, or Upland Confined Disposal Facilities (Upland Testing Manual [UTM]) (USACE 2003). These guidance documents apply to inland waters, near-coastal waters, and surrounding environs, including in-bay and confined aquatic disposal (CAD) options.

An ITM Tier II sediment evaluation was conducted on the proposed dredged material. This level of evaluation was deemed appropriate based upon the low levels of chemicals found in Mission Bay surficial sediments during the '08 Bight Regional Study, as well as, the fact the proposed dredged material is believed to be predominantly shoaling sands, with the exception of the Rose Creek site (Dredge Area 12) which is anticipated to contain finer depositional materials. The project proposes to place all dredged material in excavated areas which were used to obtain fill material during the development of Mission Bay, and is necessary to create eelgrass habitat to mitigate for impacts to eelgrass associated with the dredging. Depending on the results of the sediment characterization study, it is anticipated that any finer material would be placed on bottom of the reuse areas and be capped with sandy material suitable to support eelgrass. Analyses of sediments included physical and chemical (whole sediment and elutriate) testing to determine the suitability of the material for placement at the adjacent beneficial reuse/eelgrass mitigation site.

All sediment samples were collected between March 19 and May 7, 2015 in accordance with the procedures detailed in the agency-approved project-specific SAP (M&A 2015).

- For the sediment characterization study, the dredge areas were divided into 11 composite areas for ITM testing purposes (Figure 2).
- Core samples were collected using a 2-inch diver core or vibracore equipped with a 4-inch-diameter aluminum tube connected to a stainless steel core catcher (cutter and catcher). Prior to each deployment, a clean polyethylene plastic sleeve was inserted into the tube to encapsulate the core and minimize the potential for cross-contamination.
- Core samples were collected at multiple locations for each composite sample as illustrated in Table 3 and Figures 3 through 12. Composite area samples were subjected to a suite of physical, bulk chemistry, and elutriate chemistry analyses as detailed in the approved project-specific SAP.
- Potential beach nourishment/beneficial reuse areas were analyzed for grain size only (Table 3).
- Core locations, depth, estimated volumes recovered, and notes are summarized in Table 4.
- Sample observations (color, odor, stratification, etc.) were recorded for each core and are presented in Appendix A – Vibracore Field Logs. Core photographs are presented in Appendix B.



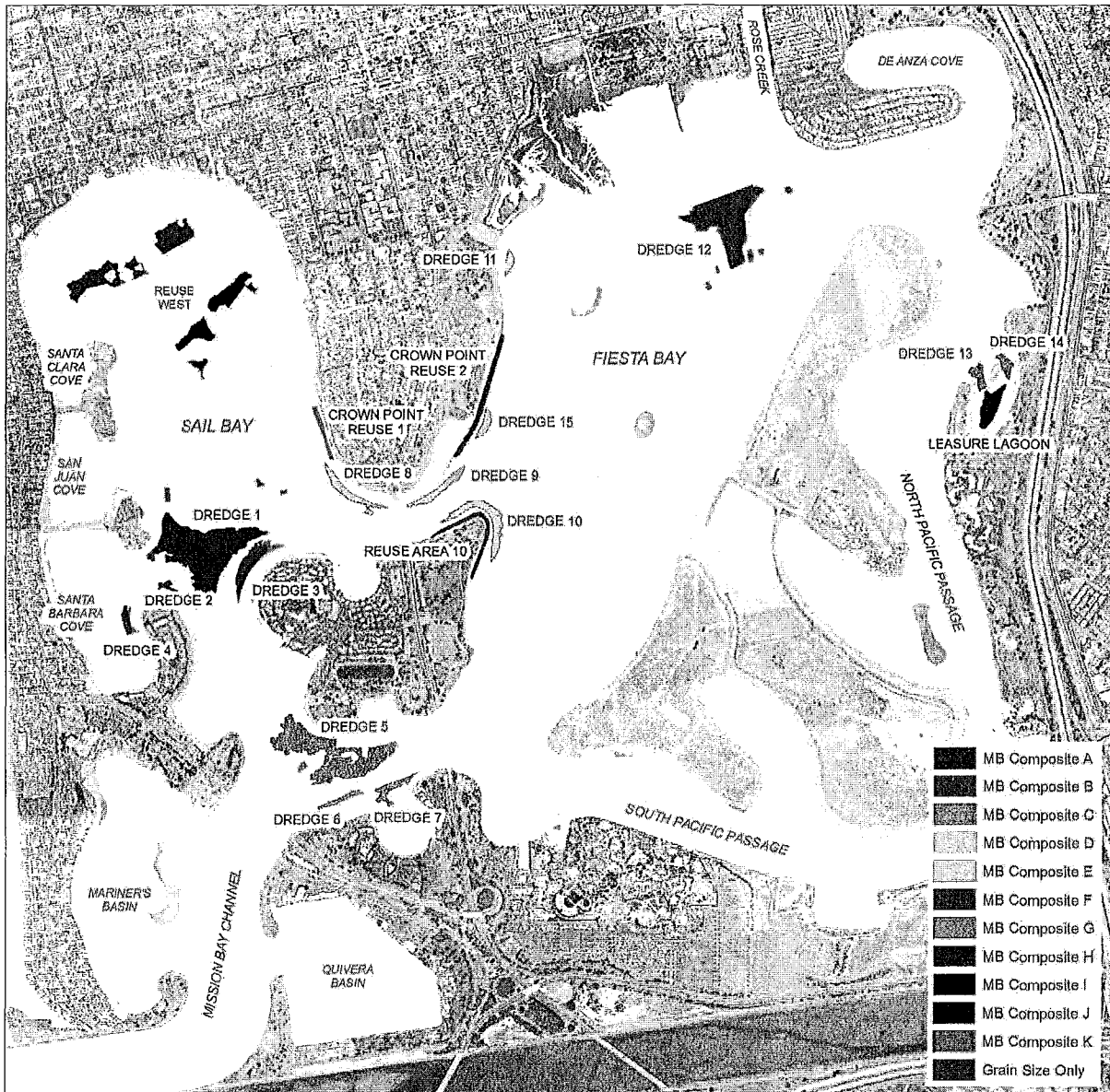


Figure 2. Mission Bay Maintenance Dredging Sediment Testing Composite Areas.

**Table 3. Sample Composite Identification**

Composite	Site	Location
Comp A	1A	1
		2
		3
		4
		5
	1B	1
	1C	1
Comp B	2	1
	3	1
		2
		3
	4	1
2		
Comp C	6	1
	7	1
		2
Comp D	8	1
		2
	9	1
		2
	11	1
		2
	15	1
2		
Comp E	10	1
		2
		3
Comp F	12A	1
		2
		3
		4
	12B	1
	12C	1
	12D	1
	12E	1
12F	1	

Composite	Site	Location
Comp G	13	1
		2
	14	1
		2
Comp H	Reuse West 1	1
		2
	Reuse West 2	1
		2
	Reuse West 3	1
		2
	Reuse West 4	1
2		
Comp I	Reuse West 5	1
		2
	Reuse West 6	1
		2
Reuse West 7	1	
	2	
Comp J	Leisure Lagoon	1
		2
Comp K	5A	1
		2
		3
		4
	5B	1
		2
Beach Reuse Area 1		1
Beach Reuse Area 2		1
Beach Reuse Area 10		1
		2



Figure 3. Core Locations for Dredge Areas 1, 2, and 3.



Figure 4. Core Locations for Dredge Area 4.

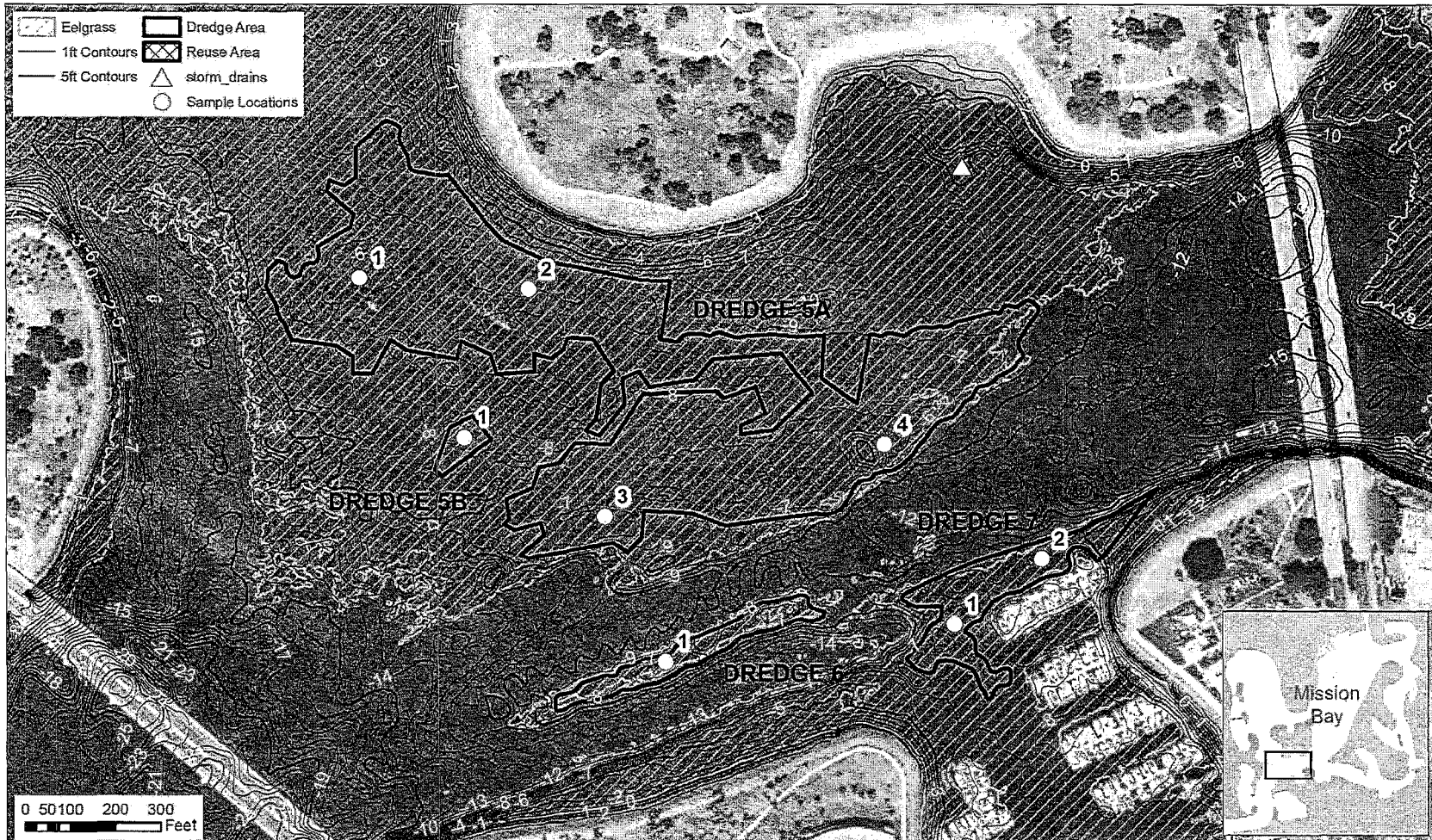


Figure 5. Core Locations for Dredge Areas 5, 6, and 7.

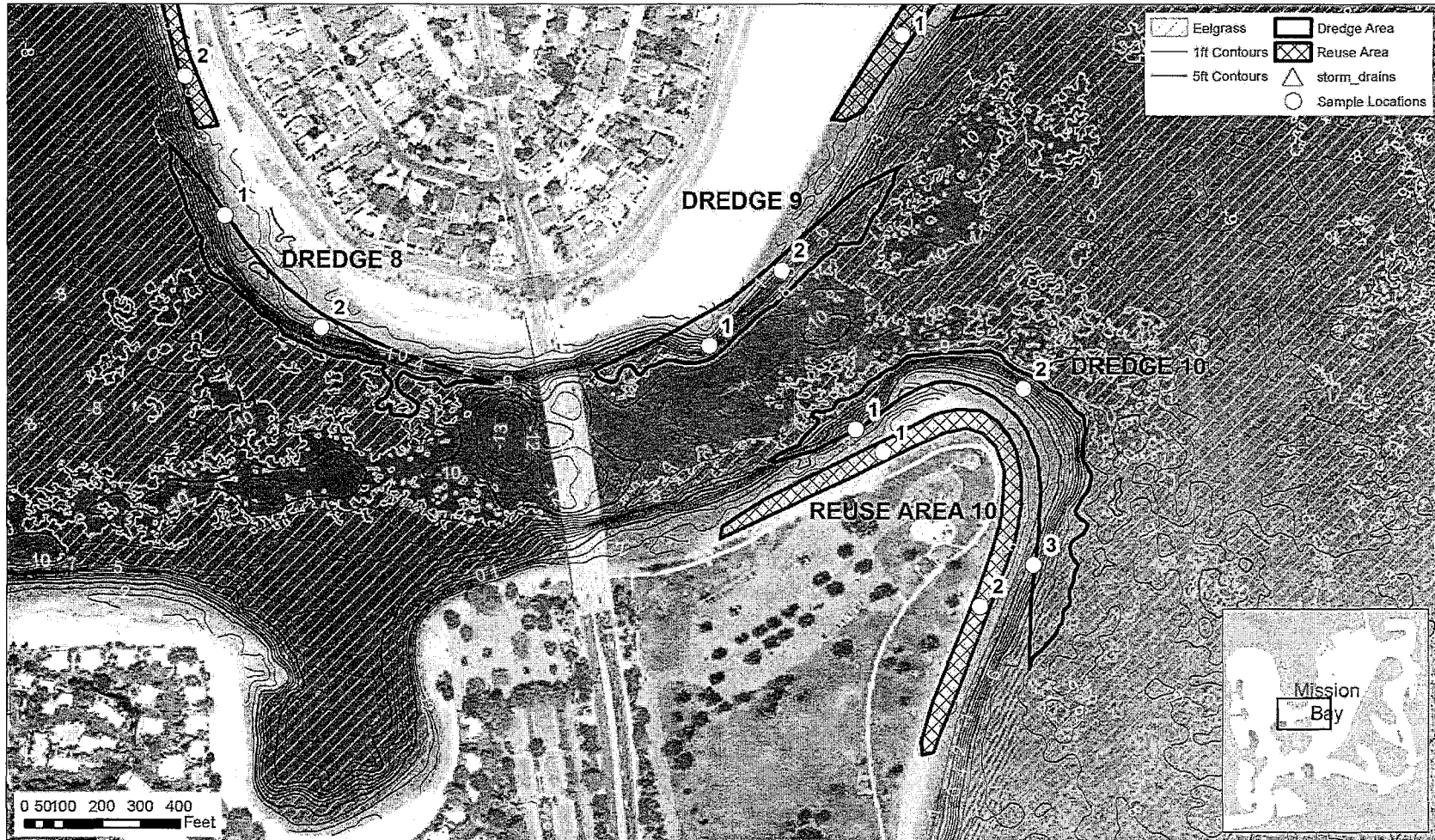


Figure 6. Core Locations for Dredge Areas 8, 9, 10, and Reuse Site 10.



Figure 7. Core Locations for Dredge Area 11.



Figure 8. Core Locations for Crown Point Beneficial Reuse/Beach Nourishment Sites and Dredge Area 15.



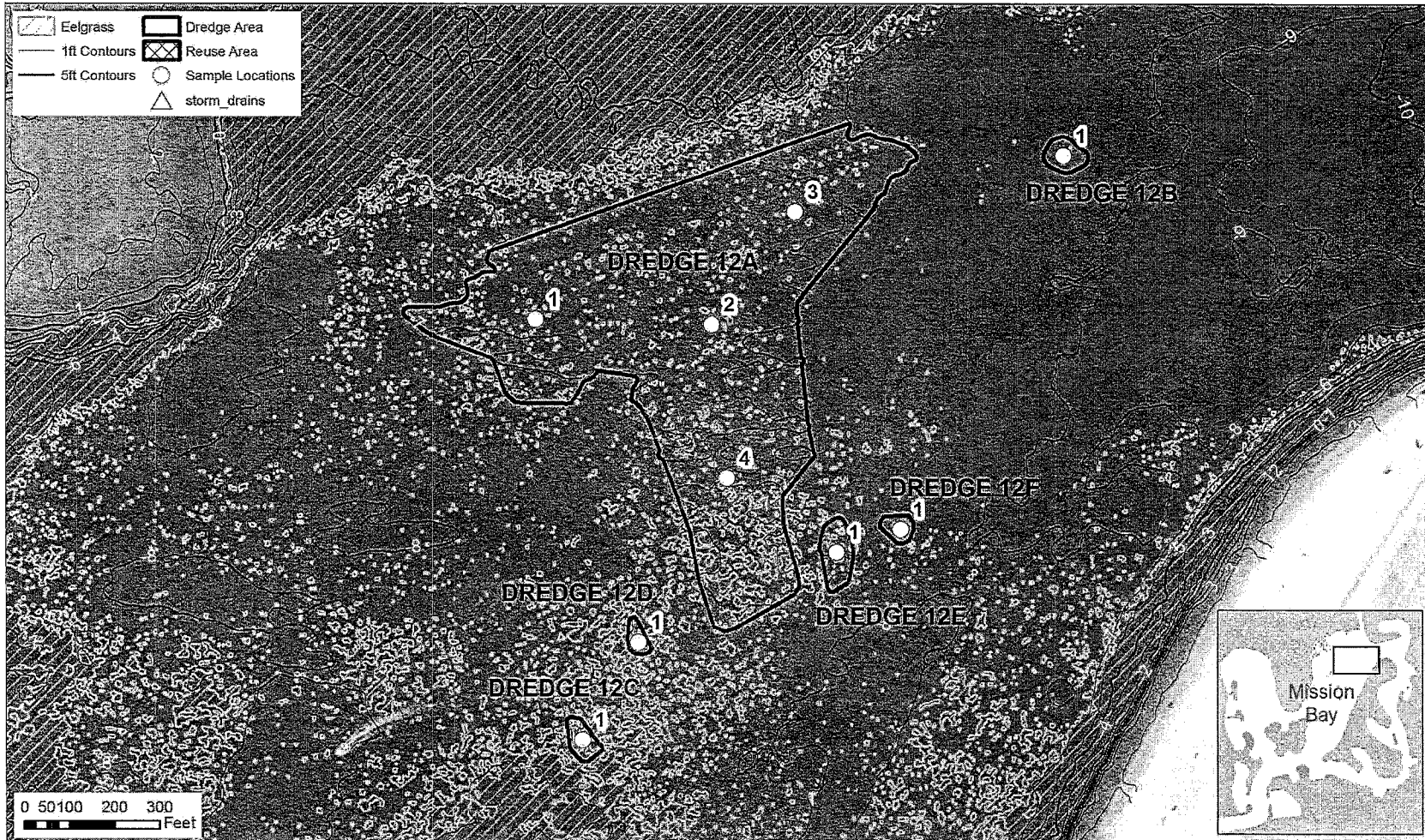


Figure 9. Core Locations for Dredge Area 12A, 12 B, 12C, 12D, 12E, and 12F.

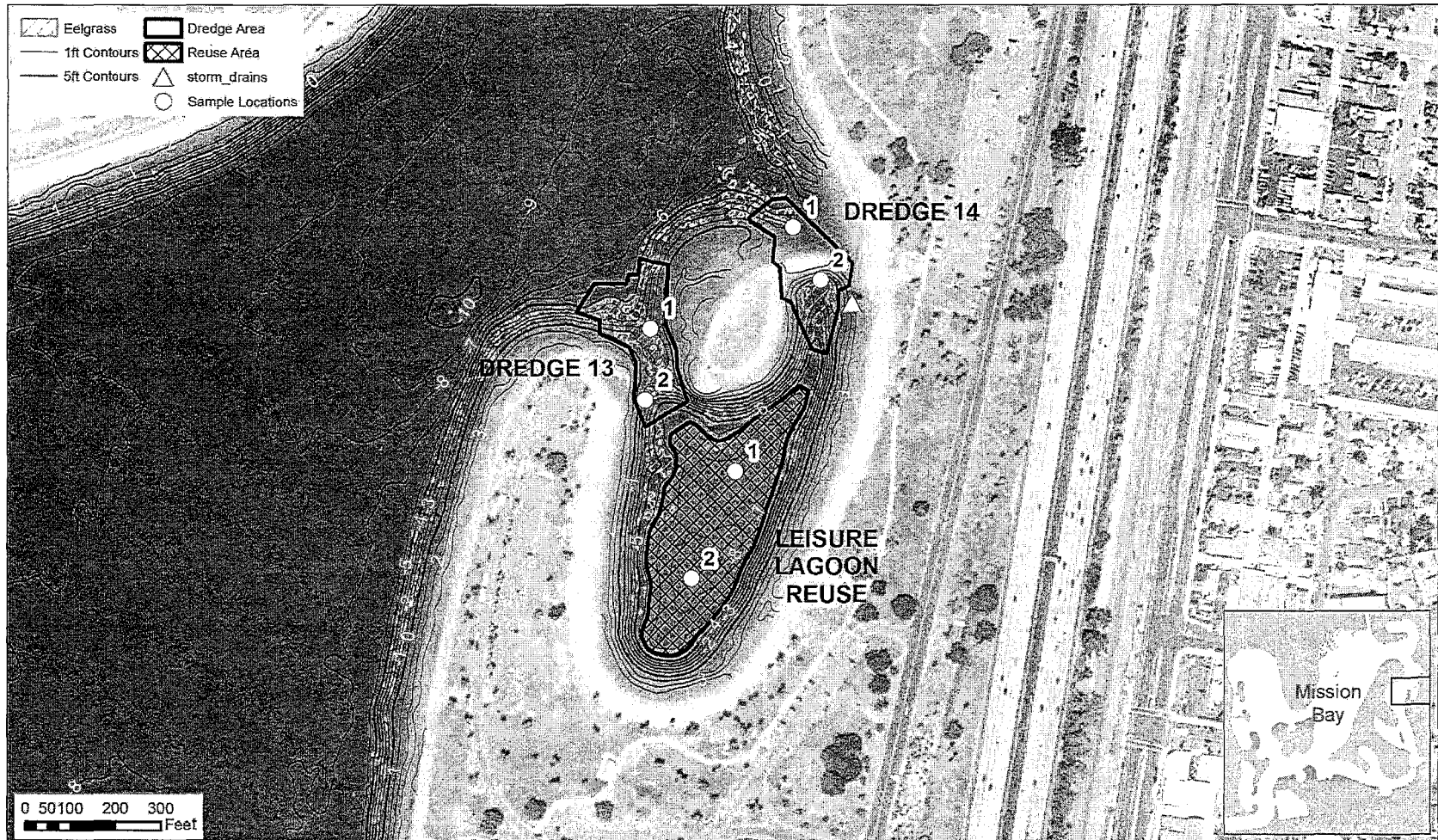


Figure 10. Core Locations for Dredge Areas 13, 14, and Leisure Lagoon.



Figure 11. Beneficial Reuse/Eelgrass Restoration Sites 1, 2, 3, and 4 Core Locations.

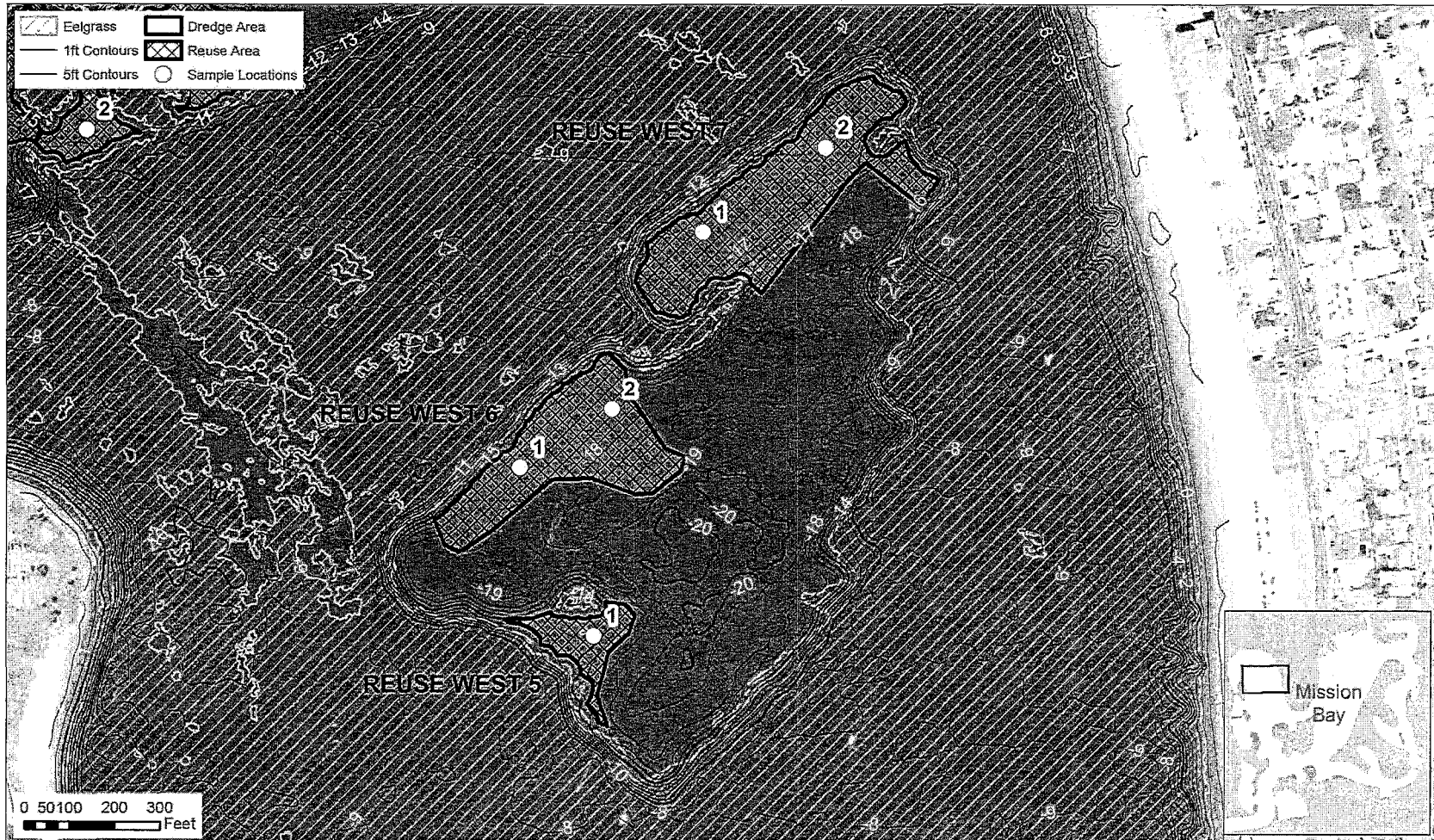


Figure 12. Beneficial Reuse/Eelgrass Restoration Sites 5, 6, and 7 Core Locations.

**Table 4. Vibracore Log.**

Composite	Station	Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments	
Comp A	1A	1	32° 46.687	117° 14.709	3/20/15	1145	-7.5	-10	2.5	2.5	2	Top 0.5'- unconsolidated silt; Bottom 1.5'-fine sand; plug Eelgrass in vicinity.
		2	32° 46.639	117° 14.694	3/20/15	930	-7	-10	3	3	2.5	Top 0.5'- unconsolidated silt; Sulfide odor; Mid 1.75'-unconsolidated silt and sand; Bottom 0.5'-fine sand; plug Eelgrass in vicinity.
		3	32° 46.691	117° 14.633	3/20/15	1130	-7.5	-10	2.5	2.5	2	Top 0.5'- unconsolidated silt; Bottom 1.5'-fine sand; plug Eelgrass in vicinity.
		4	32° 46.596	117° 14.667	3/20/15	1030	-7.5	-10	2.5	2.5	2	Top 0.5'- unconsolidated silt; Bottom 1.5'-fine sand; plug Eelgrass in vicinity.
		5	32° 46.676	117° 14.572	3/20/15	1100	-7.5	-10	2.5	2.5	2	Top 0.5'- unconsolidated silt; Mid 1'-clay/silt w/ some sand; Bottom 0.5'-fine sand w/ shell hash; plug Eelgrass in vicinity.
	1B	1	32° 46.780	117° 14.771	3/20/15	1200	-7.5	-10	2.5	2.5	2	Top 0.5'- unconsolidated silt; Bottom 1.5'-fine sand; plug Eelgrass in vicinity.
	1C	1	32° 46.796	117° 14.528	3/20/15	1230	-7.5	-10	2.5	2.5	2.5	Top 0.5'- unconsolidated silt; Sulfide odor; Mid 0.5'-clay; Bottom 1.5'-fine sand; plug Eelgrass in vicinity.
	1D	1	32° 46.786	117° 14.465	3/20/15	1300	-7.5	-10	2.5	2.5	2	Top 0.5'- unconsolidated silt; Bottom 1.5'-fine sand; plug Eelgrass in vicinity.

Composite	Station		Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments
Comp B	2	1	32° 46.575	117° 14.775	3/25/15	1145	-7.5	-10	2.5	2.5	2.5	Top 0.5'- unconsolidated silt; Sulfide odor Mid 1'-silt/clay; Bottom 1'-fine sand Eelgrass in vicinity. Second core for volume.
	3	1	32° 46.594	117° 14.577	3/25/15	1300	-6.8	-10	3.2	3	2.5	Top 0.5'- unconsolidated silt; sulfide odor; Bottom 2'-fine sand Eelgrass in vicinity.
		2	32° 46.638	117° 14.544	3/25/15	1245	-6.2	-10	3.8	3.8	3	Top 0.25'- unconsolidated silt; Bottom 2.75'-fine sand; plug Eelgrass in vicinity.
		3	32° 46.662	117° 14.499	3/25/15	1230	-7	-10	3	2.5	2.5	Top 0.5'- unconsolidated silt; sulfide odor Bottom 2'-fine sand; plug Eelgrass in vicinity. Second core for volume.
	4	1	32° 46.517	117° 14.866	3/25/15	1100	-7.5	-10	2.5	2.5	2.5	Top 0.5'- unconsolidated silt; sulfide odor Mid 1'-clay/silt w/ some sand; Bottom 1'-fine sand Eelgrass in vicinity. Second core for volume.
		2	32° 46.483	117° 14.858	3/25/15	1130	-7.5	-10	2.5	2.5	2.5	Top 0.5'- unconsolidated silt; sulfide odor Bottom 2'-fine sand; plug Eelgrass in vicinity. Second core for volume.

Composite	Station	Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments	
Comp C	6	1	32° 46.101	117° 14.324	3/25/15	900	-7.3	-10	2.7	2.5	2.25	Top 0.25'- unconsolidated silt; sulfide odor Bottom 2'-fine sand; plug Eelgrass in vicinity. Second core for volume.
	7	1	32° 46.116	117° 14.200	3/25/15	800	-7.5	-10	2.5	2.5	2.5	Top 1'- unconsolidated silt;; sulfide odor Bottom 1.5'-fine sand; plug Eelgrass in vicinity. Second core for volume.
		2	32° 46.140	117° 14.162	3/25/15	830	-7.4	-10	2.6	2.5	2	Top 0.25'- unconsolidated silt; sulfide odor Bottom 1.75'-fine sand; plug Eelgrass in vicinity. Second core for volume.
Comp D	8	1	32° 46.822	117° 14.329	4/22/15	1345	-1	-10	9	6	5.5	Top 0.5'- unconsolidated silt; sulfide odor; Mid 1'-fine sand w/ some silt; Mid 2'- medium sand w/ shell hash; Bottom 2'-clay w/ fine sand; Refusal; kept falling over; Eelgrass in vicinity.
		2	32° 46.775	117° 14.280	4/22/15	1430	-1	-10	9	6	6	Top 0.5'- unconsolidated silt; sulfide odor; Mid 3.5'-fine sand; Bottom 2'-fine sand and clay; Refusal; kept falling over; Eelgrass in vicinity.
	9	1	32° 46.769	117° 14.085	4/22/15	1315	-2	-10	8	5	5	Top 0.5'- unconsolidated silt; sulfide odor; Mid 2'-fine sand w/ some silt; Bottom 2.5'-medium sand w/ shell hash; Refusal; kept falling over; Poor recovery; Eelgrass in vicinity.
		2	32° 46.801	117° 14.049	4/22/15	1240	-1.5	-10	8.5	7	7	Top 0.5'- unconsolidated silt; Mid 5.5'-fine sand w/ some silt/clay; Bottom 1'-fine/medium sand; No plug; Eelgrass in vicinity.

Composite	Station	Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments	
	11	1	32° 47.312	117° 13.871	4/22/15	1030	-1	-10	9	7	7	Top 0.5'- unconsolidated silt; Mid 1'-silt w/ clay; Mid 3.5'-fine sand; Bottom 2'-sticky clay w/ clay plug; Eelgrass in vicinity.
		2	32° 47.287	117° 13.875	4/22/15	1100	-1.5	-10	8.5	6	6	Top 0.5'- unconsolidated silt; Mid 3.5'-fine/medium sand; Bottom 2'-fine sand w/ clay; sand plug; Eelgrass in vicinity.
	15	1	32° 46.952	117° 13.921	4/22/15	1145	-1.5	-10	8.5	8.5	8.5	Top 3'- silt w/ some sand; Mid 3.5'-fine sand; Bottom 2'-clay w/ some fine sand; No plug; Eelgrass in vicinity.
		2	32° 46.933	117° 13.933	4/22/15	1200	-2	-10	8	7	7	Top 0.5'- unconsolidated silt; Mid 5'-fine sand w/ some silt; Bottom 1.5'-clay w/ some fine sand; No plug; Eelgrass in vicinity.
Comp E	10	1	32° 46.734	117° 14.011	4/22/15	1515	-1	-10	9	7	7	Top 0.5'- unconsolidated silt; sulfide odor; Mid 4.5'- fine sand w/ silt and shell hash; Bottom 2'-medium sand w/ shell hash; Refusal; kept falling over; Eelgrass in vicinity.
		2	32° 46.752	117° 13.927	4/22/15	1540	-1	-10	9	7	6	Top 0.5'- unconsolidated silt; sulfide odor; Bottom 5.5'-fine sand w/ shell hash; Refusal; kept falling over; Eelgrass in vicinity.
		3	32° 46.677	117° 13.921	4/22/15	1600	-1	-10	9	7	5	Top 0.5'- unconsolidated silt; sulfide odor; Bottom 4.5'-fine sand w/ silt and clay; Refusal; kept falling over; Eelgrass in vicinity.



Composite	Station	Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments	
Comp F	12A	1	32° 47.400	117° 13.378	5/7/15	1310	-7.9	-10	2.1	2	2	Silty clay; No odor Eelgrass in vicinity.
		2	32° 47.401	117° 13.300	5/7/15	1324	-8.1	-10	1.9	2	2	Silty clay; No odor
		3	32° 47.436	117° 13.263	5/7/15	1338	-7.8	-10	2.2	2	2	Silty clay; No odor
		4	32° 47.345	117° 13.297	5/7/15	1251	-8.4	-10	1.6	1.5	1.5	Silty clay; No odor
	12B	1	32° 47.458	117° 13.151	5/7/15	1421	-8	-10	2	2	2	Top 1'-coarse sand; Bottom 1'-silty clay; No odor
	12C	1	32° 47.243	117° 13.357	5/7/15	1130	-7.7	-10	2.3	2	2	Clay w/ fine sand; No odor Eelgrass in vicinity.
	12D	1	32° 47.278	117° 13.330	5/7/15	1204	-8.4	-10	1.6	2	2	Silty clay; No odor Eelgrass in vicinity.
	12E	1	32° 47.309	117° 13.285	5/7/15	1231	-7.2	-10	2.8	2	2	Silty clay; No odor Eelgrass in vicinity.
	12F	1	32° 47.449	117° 13.299	5/7/15	1359	-7.6	-10	2.4	2	2	Silty clay; No odor
Comp G	13	1	32° 47.049	117° 12.645	4/22/15	930	-2.5	-8	5.5	5	5	Top 0.5'- unconsolidated silt; Bottom 4.5'-fine/medium sand; No odor Eelgrass in vicinity.
		2	32° 47.023	117° 12.647	4/22/15	900	-2.5	-8	5.5	5	5	Top 0.5'- unconsolidated silt; Bottom 4.5'-fine sand; No odor Eelgrass in vicinity.
	14	1	32° 47.086	117° 12.584	4/22/15	800	-2	-8	6	6	6	Top 2'- unconsolidated silt w/ some sand; Bottom 4'-fine/medium sand w/ plug; No odor
		2	32° 47.067	117° 12.572	4/22/15	845	-2	-8	6	5.5	5.5	Top 1.5'- unconsolidated silt; sulfide odor; Mid 2.5'- silt w/ sand; Bottom 1.5'-fine sand Eelgrass in vicinity.

Composite	Station		Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments	
Comp H	Reuse West 1	1	32° 47.291	117° 14.867	3/19/15	1025	-13	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Mid 1'-clay w/ sand Bottom 0.5'-fine sand w/ shell hash; No odor	
		2	32° 47.270	117° 14.849	3/19/15	1015	-13	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Bottom 1.5'-fine brown sand No odor	
	Reuse West 2	1	32° 47.283	117° 14.909	3/19/15	945	-12.5	Top 2 feet	2	2	2	Top 1'- unconsolidated brown silt Bottom 1'-fine grey sand No odor	
		2	32° 47.251	117° 14.903	3/19/15	1000	-12	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Mid 1'-clay Bottom 0.5'-fine sand w/ shell hash; No odor	
	Reuse West 3	1	32° 47.238	117° 15.008	3/19/15	915	-17	Top 2 feet	2	2	2	Top 1'- unconsolidated black silt Bottom 1'-sticky black clay Sulfide odor	
		2	32° 47.273	117° 14.940	3/19/15	830	-15	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Bottom 1.5'-fine grey sand No odor	
	Reuse West 4	1	32° 47.341	117° 14.780	3/19/15	1040	-17	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Bottom 1.5'-fine grey sand No odor	
		2	32° 47.359	117° 14.726	3/19/15	1100	-17	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Mid 1'-clay Bottom 0.5'-fine sand; No odor	
	Comp I	Reuse West 5	1	32° 47.069	117° 14.683	3/19/15	1200	-17	Top 2 feet	2	2	2	Fine grey sand; No odor
		Reuse West 6	1	32° 47.130	117° 14.716	3/19/15	1145	-17.5	Top 2 feet	2	2	2	Top 1'- unconsolidated brown silt Bottom 1'-fine grey sand No odor
2			32° 47.152	117° 14.677	3/19/15	1135	-17.5	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Mid 1'-clay w/ sand Bottom 0.5'-fine sand w/ shell hash; No odor	
Reuse West 7		1	32° 47.216	117° 14.638	3/19/15	1130	-17.5	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Mid 0.5'-clay Bottom 1'-fine sand; No odor	
		2	32° 47.247	117° 14.586	3/19/15	1115	-16	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt Bottom 1.5'-fine grey sand; No odor	

Composite	Station	Latitude	Longitude	Sample Date	Time	Depth (ft MLLW)	Project Depth (ft MLLW)	Target Penetration (ft)	Actual Penetration (ft)	Recovery Core Length (ft)	Comments	
Comp J	Leisure Lagoon	1	32° 46.997	117° 12.608	3/25/15	1430	-7.8	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt; Mid 1.25'-clay/silt; Bottom 0.25'-fine sand Three total cores for volume.
		2	32° 46.958	117° 12.626	3/25/15	1445	-8.3	Top 2 feet	2	2	2	Top 0.5'- unconsolidated silt; Mid 1.25'-clay/silt; Bottom 0.25'-fine sand Three total cores for volume.
Comp K	5A	1	32° 46.239	117° 14.457	5/7/15	1030	-8	-10	2	2	2	Top 0.5'- fine sand and silt; No odor; Bottom 1.5'-fine sand; Eelgrass in vicinity. Second core for volume.
		2	32° 46.250	117° 14.384	5/7/15	1052	-8	-10	2	2	2	Top 0.5'- fine sand and silt; Bottom 1.5'-fine sand; Eelgrass in vicinity. Second core for volume.
		3	32° 46.140	117° 14.330	5/7/15	930	-10	-10	2	2	2	Top 0.5'- fine sand and silt; sulfide odor; Bottom 1.5'-fine sand; Eelgrass in vicinity. Second core for volume.
		4	32° 46.181	117° 14.230	5/7/15	851	-7.6	-10	2.5	2	2	Fine sand; No odor; Eelgrass in vicinity; Second core for volume.
	5B	1	32° 46.181	117° 14.384	5/7/15	1004	-10	-10	2	2	2	Top 0.5'- fine sand and silt; No odor; Bottom 1.5'-fine sand; Eelgrass in vicinity. Second core for volume.
Beach Reuse Area	Area 1	1	32° 46.955	117° 14.008	3/19/15	1230	0	NA	2	0.5	0.5	Fine/medium sand; grain size only
		2	32° 46.882	117° 13.946	3/19/15	1245	0	NA	2	0.5	0.5	Fine/medium sand; grain size only
	Area 2	1	32° 46.901	117° 14.337	3/19/15	1315	0	NA	2	0.5	0.5	Fine/medium sand; some shell hash; grain size only
		2	32° 47.093	117° 14.348	3/19/15	1330	0	NA	2	0.5	0.5	Fine/medium sand; some shell hash; grain size only
	Area 10	1	32° 46.720	117° 13.991	3/19/15	1300	0	NA	2	0.5	0.5	Fine/medium sand; some shell hash; grain size only
		2	32° 46.660	117° 13.907	3/19/15	1310	0	NA	2	0.5	0.5	Fine/medium sand; some shell hash; grain size only

### 3.0 ANALYTICAL METHODS AND RESULTS

#### 3.1 PHYSICAL AND CHEMICAL ANALYSIS

An ITM Tier II sediment evaluation was conducted on the proposed dredged material. This level of evaluation was deemed appropriate based upon the low levels of chemicals found in Mission Bay sediments during the Bight '08 Regional Study, as well as the fact the proposed dredged material will be capped with clean sediment at the nearby beneficial reuse disposal site. Analyses of sediments included physical and chemical (whole sediment and elutriate) testing to determine the suitability of the material for placement at the adjacent beneficial reuse/eelgrass mitigation site. The physical and chemical analyses, analysis methods, and target detection limits are listed in Table 5. Chemical, physical, and elutriate tests were performed in accordance with EPA methodologies as outlined in the laboratory report contained in Appendix C, and in agreement with the site-specific SAP (M&A 2015). Physical and chemical laboratory results, including elutriate testing results from the eleven Composite Areas are summarized in the following sections.

##### 3.1.1 Sediment Physical Results

Grain-size analyses were performed by Eurofins Calscience Environmental Laboratories Inc. (Calscience) on composite area samples, and results are presented in Table 6. With the exception of Composite Sites H and J which were classified as very fine sand and silt, respectively, the samples ranged from fine to medium-grained sand. Note that Composite Sites H and J are proposed disposal/beneficial reuse sites, and as expected the majority of the beach reuse sites consisted of medium-grained sand with over 97% sand and 3% fines (silt and clay). The majority of proposed dredge footprints (except for Dredge Area 12 – Rose Creek) consisted of material that ranged from 76 percent to 88 percent sand.

##### 3.1.2 Sediment Chemistry Results

Composite area chemistry results are provided in Table 7. All eleven composite area samples were tested for the same chemical constituents. Sediment chemical concentrations at the dredge areas were compared to available effects range low (ERL) and effects range median (ERM) levels. ERL and ERM values were developed as sediment quality guidelines (Long et al. 1995) by screening published literature for samples identified as toxic by the original investigators that also had associated chemical analyses. The ERL is the lowest tenth percentile concentration of the available sediment toxicity data, and represents a concentration below which effects to sensitive species are not expected to occur. The ERM is the median effects concentration, above which adverse effects are likely to occur. Relationships for biological effects to values between the ERL and ERM are not well established. ERLs and ERMs do not represent sediment quality criteria, but are useful in providing a general basis for characterizing sediment quality.

##### *Metals*

Only two metals, arsenic and mercury were detected above the ERL and include:

- For Composite Site F, arsenic was detected at 9.12 mg/kg which is above the ERL guideline value of 8.2 mg/kg.

**Table 5. Chemical Analyses for Sediment and Elutriate Samples.**

Analyte	Analysis Method	Sediment Target Detection Limits <sup>a, b</sup>	Elutriate Reporting Limits <sup>b</sup>
Percent/Total solids	SM 2540B	0.1%	N/A
Total organic carbon	9060 A	500 mg/kg	N/A
Total sulfides	376.2M <sup>c</sup>	0.1 mg/kg	N/A
Soluble sulfides	SM 4500 S2 - D	0.050 mg/L	N/A
Oil and Grease	EPA 413.2M	10 mg/kg	N/A
TPH Carbon Breakdown (C6-C44)	EPA 8015B (M)	5 mg/kg	N/A
TRPH	418.1M <sup>d</sup>	10 mg/kg	N/A
Arsenic	6020/6010B <sup>d</sup>	0.1 mg/kg	10 µg/L
Cadmium	6020/6010B <sup>d</sup>	0.1 mg/kg	5 µg/L
Chromium	6020/6010B <sup>d</sup>	0.1 mg/kg	5 µg/L
Copper	6020/6010B <sup>d</sup>	0.1 mg/kg	5 µg/L
Lead	6020/6010B <sup>d</sup>	0.1 mg/kg	8 µg/L
Mercury	7471A <sup>d</sup>	0.02 mg/kg	0.5 µg/L
Nickel	6020/6010B <sup>d</sup>	0.1 mg/kg	5 µg/L
Selenium	6020/6010B <sup>d</sup>	0.1 mg/kg	15 µg/L
Silver	6020/6010B <sup>d</sup>	0.1 mg/kg	5 µg/L
Zinc	6020/6010B <sup>d</sup>	1.0 mg/kg	10 µg/L
PAHs <sup>e</sup>	8270C SIM/ GC/TQ	10 µg/kg	1.0 – 13 µg/L
Pesticides <sup>f</sup>	8081A <sup>d</sup>	1.0 - 25 µg/kg	0.1 µg/L
PCB congeners <sup>g</sup>	8082A ECD	0.5 µg/kg	1.0 µg/L
Phenols	8270C SIM <sup>d</sup>	10 – 500 µg/kg	N/A
Phthalates	8270C SIM <sup>d</sup>	10 µg/kg	5.0 – 25 µg/L
Pyrethroids	GC/MS/MS <sup>h</sup>	0.5 – 1.0 µg/kg	5.0 µg/L
Organotins	Krone <i>et al.</i> <sup>i</sup>	3.0 µg/kg	N/A

Notes:

- a Sediment minimum detection limits are on a dry-weight basis.
- b Reporting limits provided by Eurofins Calscience Environmental Laboratories, Inc.
- c Standard Methods for the Examination of Water and Wastewater, 19th Edition APHA et al. 1995.
- d USEPA 1986-1996. SW -846. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition.
- e Includes 1-Methylnapthalene, 2-Methylnapthalene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2-Chlorphenol, 2-Methylnapthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo (b) Fluoranthene, Benzo (g,h,i) Perylene, Benzo (k) Fluoranthene, Chrysene, Dibenz (a,h) Anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-c,d) Pyrene, Naphthalene, Pentachlorophenol, Phenanthrene, and Pyrene.
- f Includes 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, DDTs, Aldrin, Alpha-BHC, Beta-BHC, Chlordane, Delta-BHC, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Gamma-BHC, Heptachlor, Heptachlor Epoxide, Methoxychlor, Toxaphene.
- g Polychlorinated Biphenyls, sum of congeners: 003, 005/008, 015, 018, 027, 028, 029, 031, 033, 037, 044, 049, 052, 056, 060, 066, 070, 074, 077, 081, 087, 095, 097, 099, 101, 105, 110, 114, 118, 119, 123, 126, 128, 132, 137, 138/158, 141, 149, 151, 153, 156, 157, 167, 169, 170, 174, 177, 180, 183, 184, 187, 189, 194, 195, 200, 201, 203, 206, and 209.
- h Allethrin (Bioallethrin), Bifenthrin, Cyfluthrin-beta (Baythroid), Cyhalothrin-Lambda, Cypermethrin, Deltamethrin (Decamethrin), Esfenvalerate, Fenpropathrin (Danitol), Fenvalerate (sanmarton), Fluvalinate I Permethrin (cis and trans), Resmethrin (Bioresmethrin), Resmethrin, Sumithrin (Phenothrin), Tetramethrin, and Tralomethrin.
- i Rice, C.D. et al. 1987, or similar (e.g. Krone et al. 1989)

PAH polycyclic aromatic hydrocarbon; PCB polychlorinated biphenyl; TRPH total recoverable petroleum hydrocarbons  
 mg/kg milligrams per kilogram (parts per million)  
 µg/kg micrograms per kilogram (parts per billion)

**Table 6. Composite Area and Beneficial Reuse Area Sediment Grain Size Results.**

	Total Gravel (%)	Very Coarse Sand (%)	Coarse Sand (%)	Medium Sand (%)	Fine Sand (%)	Very Fine Sand (%)	Total Sand (%)	Silt (%)	Clay (%)	Total Silt & Clay (%)	Mean Grain Size (mm)	Description
Composite A	0.00	0.00	2.02	16.59	42.57	22.68	83.86	14.39	1.75	16.14	0.169	Fine Sand
Composite B	0.00	0.10	1.28	6.49	42.67	25.68	76.22	20.98	2.80	23.78	0.134	Fine Sand
Composite C	0.00	1.05	4.52	24.81	42.32	14.71	87.41	11.20	1.39	12.59	0.221	Fine Sand
Composite D	0.00	0.54	4.66	23.99	34.78	17.59	81.56	15.89	2.54	18.43	0.202	Fine Sand
Composite E	0.00	0.61	6.91	26.42	39.43	15.51	88.88	9.44	1.68	11.12	0.232	Fine Sand
Composite F	0.00	0.38	4.87	22.02	18.52	14.31	60.10	33.73	6.16	39.89	0.168	Fine Sand
Composite G	0.00	0.22	11.49	39.87	22.59	6.66	80.83	15.79	3.38	19.17	0.270	Medium Sand
Composite H	0.00	0.00	0.15	9.26	32.72	15.51	57.64	37.62	4.74	42.36	0.112	Very Fine Sand
Composite I	0.00	0.00	0.98	14.20	35.51	13.90	64.59	31.31	4.09	35.40	0.137	Fine Sand
Composite J	0.00	0.00	0.00	0.31	10.90	11.50	22.71	66.80	10.49	77.29	0.044	Silt
Composite K	0.00	0.15	3.92	20.19	44.98	18.49	87.73	10.99	1.28	12.27	0.196	Fine Sand
Crown Point 1-1	0.00	7.77	21.00	34.70	28.80	4.82	97.09	2.32	0.58	2.90	0.433	Medium Sand
Crown Point 1-2	0.00	5.25	18.88	29.68	34.27	8.92	97.00	2.54	0.46	3.00	0.375	Medium Sand
Crown Point 2-1	0.00	0.55	2.11	16.10	60.61	17.60	96.97	2.56	0.46	3.02	0.199	Fine Sand
Crown Point 2-2	0.00	5.68	15.40	36.79	35.99	5.14	99.00	0.72	0.28	1.00	0.385	Medium Sand
Beach Reuse Area 10-1	0.00	0.03	9.37	49.39	36.99	3.27	99.05	0.68	0.28	0.96	0.303	Medium Sand
Beach Reuse Area 10-2	0.00	1.72	7.90	27.70	49.70	10.40	97.42	2.15	0.44	2.59	0.270	Medium Sand

**Table 7. Composite Area Sediment Chemistry Results.**

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
<b>General Chemistry</b>														
Ammonia (as N)	mg/kg			210	ND	ND	24	40	58	38	91	ND	58	47
Carbon, Total Organic	%			0.42	0.43	0.48	0.50	0.43	0.84	0.39	0.60	0.63	0.68	0.58
Solids, Total	%			66.2	70.3	70.7	69.9	70.4	58	73.8	61.6	65.1	48.3	70.9
Sulfide, Dissolved	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sulfide, Total	mg/kg			9.8	18	37	11	6.4	45	28	34	31	160	71
Oil and Grease	mg/kg			26	47	20	34	27	70	150	47	17	250	38
TRPH	mg/kg			24	35	ND	24	20	56	110	45	17	210	17
<b>Metals</b>														
Arsenic	mg/kg	8.2	70	1.86	2.79	2.37	2.46	2.74	<b>9.12</b>	2.06	2.64	2.76	<b>8.91</b>	1.68
Cadmium	mg/kg	1.2	9.6	0.162	0.160	0.157	0.090	0.125	0.141	0.0837	0.225	0.209	0.333	ND
Chromium	mg/kg	81	370	10.1	13.5	14.5	14.6	15.7	27.9	6.75	13.3	12.7	26.9	11.6
Copper	mg/kg	34	270	5.49	7.76	8.53	8.93	8.83	21.4	6.55	8.89	8.39	27.1	7.04
Lead	mg/kg	46.7	218	3.41	3.71	3.61	6.23	5.55	25.2	9.67	5.82	5.39	30.7	3.55
Mercury	mg/kg	0.15	0.71	ND	0.0179	0.0125	<b>0.152</b>	0.0208	0.0404	ND	0.00982	0.0105	0.0427	0.0137
Nickel	mg/kg	20.9	51.6	3.09	3.88	4.12	4.44	4.50	11.4	2.27	4.26	4.12	9.79	3.56
Selenium	mg/kg			0.314	0.188	0.244	0.106-J	0.149	0.216	ND	0.257	0.233	0.583	0.208
Silver	mg/kg	1	3.7	0.0680	0.0493	0.0499	ND	ND	ND	ND	0.0826	0.0819	0.193	0.0559
Zinc	mg/kg	150	410	26.0	32.5	33.1	36.8	38.7	85.5	25.7	37.7	34.0	85.0	35.0
<b>Carbon Chain</b>														
C6	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C7	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C8	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C9-C10	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C11-C12	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C13-C14	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C15-C16	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
C17-C18	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C19-C20	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C21-C22	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C23-C24	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C25-C28	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C29-C32	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C33-C36	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C37-C40	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C41-C44	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C6-C44 Total	mg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Chlorinated Pesticides</b>														
2,4'-DDD	µg/kg			ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND
2,4'-DDE	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/kg	2	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/kg	2.2	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND
4,4'-DDT	µg/kg	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Detectable DDTs	µg/kg	1.58	46.1	ND	ND	ND	ND	ND	ND	1.0	ND	ND	1.1	ND
Aldrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor	µg/kg	0.02	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND



	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
Endosulfan Sulfate	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Chlordane	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma Chlordane	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-nonachlor	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxychlordane	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlordane	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Synthetic Pyrethroids</b>														
Allethrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bifenthrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.65	ND
Cyfluthrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cypermethrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Deltamethrin/Tralomethrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fenpropathrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fenvalerate/Esfenvalerate	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluvalinate	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin (cis/trans)	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.39	ND
Phenothrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Resmethrin/Bioresmethrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
lambda-Cyhalothrin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Synthetic Pyrethroids	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	1.04	ND

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
<b>PAHs</b>														
1,6,7-Trimethylnaphthalene	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	µg/kg			ND	ND	ND	ND	ND	23	ND	ND	ND	29	25
2-Methylnaphthalene	µg/kg	70	670	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	µg/kg	16	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	µg/kg	44	640	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	µg/kg	85.3	1100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (a) Anthracene	µg/kg	261	1600	ND	ND	ND	ND	ND	11	15	ND	7.9	14	6.7
Benzo (a) Pyrene	µg/kg	430	1600	ND	ND	ND	ND	ND	15	23	ND	13	21	ND
Benzo (b) Fluoranthene	µg/kg			ND	ND	ND	ND	ND	16	25	ND	12	26	ND
Benzo (e)Pyrene	µg/kg			ND	ND	ND	3.2	ND	12	16	ND	11	18	3.3
Benzo (g,h,i) Perylene	µg/kg			ND	ND	ND	9.9	ND	18	28	ND	21	34	ND
Benzo (k) Fluoranthene	µg/kg			ND	ND	ND	7.7	ND	16	25	ND	ND	23	ND
Biphenyl	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	µg/kg	384	2800	ND	ND	ND	ND	ND	14	19	ND	14	20	6.1
DCEPA	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz (a,h) Anthracene	µg/kg	63.4	260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzothiophene	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	µg/kg	600	5100	ND	ND	ND	ND	ND	18	25	ND	26	28	7.2
Fluorene	µg/kg	19	540	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno (1,2,3-c,d) Pyrene	µg/kg			ND	ND	ND	ND	ND	15	24	ND	13	25	ND
Naphthalene	µg/kg	160	2100	ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND
Perthane	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perylene	µg/kg			ND	ND	ND	ND	ND	4.7	4.2	ND	ND	ND	2.9
Phenanthrene	µg/kg	240	1500	ND	ND	ND	ND	ND	ND	9.2	ND	22	ND	ND
Pyrene	µg/kg	665	2600	ND	ND	ND	6.3	ND	24	33	ND	32	32	7.1

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
Total PAHs	µg/kg	4022	44792	ND	ND	ND	27.1	ND	186.7	246.4	ND	183.9	270	58.3
<b>Phenols</b>														
2,3,4,6-Tetrachlorophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dichlorophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3/4-Methylphenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-Methylphenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	µg/kg			ND	ND	ND	230	ND	ND	ND	ND	ND	ND	ND
Phenol	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.3
<b>Phthalates</b>														
Bis(2-Ethylhexyl) Phthalate	µg/kg			44	27	82	94	73	270	270	110	340	130	88
Butyl Benzyl Phthalate	µg/kg			8.7	13	11	30	35	14	35	51	17	32	11
Diethyl Phthalate	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	13	ND
Dimethyl Phthalate	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-Butyl Phthalate	µg/kg			37	49	ND	ND	ND	ND	ND	48	70	220	ND
Di-n-Octyl Phthalate	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Butyltins</b>														
Dibutyltin	µg/kg			1.9	2.4	2.1	3.2	2.9	ND	5.7	1.6	2.0	8.4	ND
Monobutyltin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
Tetrabutyltin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tributyltin	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>PCBs</b>														
PCB003	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB005/008	µg/kg			ND	ND	ND	ND	ND	0.43	ND	ND	ND	ND	ND
PCB015	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB018	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB027	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB028	µg/kg			ND	ND	ND	ND	ND	0.29	ND	ND	ND	0.26	ND
PCB029	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB031	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB033	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB037	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB044	µg/kg			ND	ND	ND	ND	ND	0.47	ND	ND	ND	ND	ND
PCB049	µg/kg			ND	ND	ND	ND	ND	0.21	ND	ND	ND	ND	ND
PCB052	µg/kg			ND	ND	ND	ND	ND	0.62	0.30	ND	ND	0.20	ND
PCB056	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB060	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB066	µg/kg			ND	ND	ND	ND	ND	0.41	0.20	ND	ND	ND	ND
PCB070	µg/kg			ND	ND	ND	ND	ND	0.27	0.19	ND	ND	ND	ND
PCB074	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB077	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27
PCB081	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB087	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB095	µg/kg			ND	ND	ND	ND	ND	0.35	0.40	ND	ND	0.38	ND
PCB097	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB099	µg/kg			ND	ND	ND	ND	ND	0.56	0.22	ND	ND	0.48	ND
PCB101	µg/kg			ND	ND	ND	ND	ND	0.57	0.34	ND	ND	0.38	ND

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
PCB105	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20
PCB110	µg/kg			ND	ND	ND	ND	ND	0.55	0.32	ND	ND	0.31	ND
PCB114	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB118	µg/kg			ND	ND	ND	ND	ND	ND	0.25	ND	ND	0.50	0.26
PCB119	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB123	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB126	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21
PCB128	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB132/153	µg/kg			0.53	ND	ND	ND	ND	1.3	0.70	ND	0.58-J	1.1	0.41
PCB137	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB138/158	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37	ND
PCB141	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB149	µg/kg			ND	ND	ND	ND	ND	0.50	0.45	ND	ND	0.45	ND
PCB151	µg/kg			ND	ND	ND	ND	ND	0.27	ND	ND	ND	ND	ND
PCB156	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB157	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB167	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB168	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB169	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB170	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.36
PCB174	µg/kg			ND	ND	ND	ND	ND	ND	0.27	ND	ND	ND	ND
PCB177	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB180	µg/kg			ND	ND	ND	ND	ND	0.67	0.56	ND	ND	ND	0.37
PCB183	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB184	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB187	µg/kg			ND	ND	ND	ND	ND	0.48	0.42	ND	ND	0.29	0.26
PCB189	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB194	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	ERL	ERM	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
PCB195	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.38
PCB200	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB201	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19
PCB203	µg/kg			ND	ND	ND	ND	ND	ND	0.45	ND	ND	ND	ND
PCB206	µg/kg			ND	ND	ND	ND	ND	ND	0.34	ND	ND	ND	0.52
PCB209	µg/kg			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCB Congeners	µg/kg	22.7	180	0.53	ND	ND	ND	ND	7.95	5.41	ND	0.58	4.72	3.43

Notes:

All results reported as dry weight.

**Text** – Exceeds ERL

**Text** – Exceeds ERM

ND - not detected above the reporting limit presented in Table 5. Some analytes are reported that were detected at a concentration below the reporting limit and above the laboratory method detection limit. See Calscience report in Appendix C for all estimated values.

mg/kg - milligram per kilogram

µg/kg - micrograms per kilogram

ERL - Effects Range Low

ERM - Effects Range Median

DDT - dichlorodiphenyltrichloroethane

TRPH - total recoverable petroleum hydrocarbons

PAH - polycyclic aromatic hydrocarbons

PCB - polychlorinated biphenyls

- For Composite Site J, arsenic was detected at 8.91 mg/kg which is above the ERL guideline value of 8.2 mg/kg.
- For Composite Site D, mercury was detected at 0.152 mg/kg which is just above the ERL guideline value of 0.15 mg/kg.

Concentrations of other metals in sediment samples did not exceed their respective screening levels.

- Cadmium concentrations ranged from 0.08 mg/kg for Composite Site G to 0.33 mg/kg for Composite Site J. The ERL for cadmium is 1.2 mg/kg.
- Chromium concentrations ranged from 6.75 mg/kg for Composite Site G to 27.9 mg/kg for Composite Site F. The ERL for chromium is 81 mg/kg.
- Copper concentrations ranged from 5.49 mg/kg for Composite Site A to 27.1 mg/kg for Composite Site J. The ERL for copper is 34 mg/kg.
- Lead concentrations ranged from 3.41 mg/kg for Composite Site A to 30.7 mg/kg for Composite Site J. The ERL for lead is 46.7 mg/kg.
- Nickel concentrations ranged from 2.27 mg/kg for Composite Site G to 11.4 mg/kg for Composite Site F. The ERL for nickel is 20.9 mg/kg.
- Silver concentrations ranged from non-detect for several Composite Site (D, E, F, G) to 0.08 mg/kg for Composite Site J. The ERL for silver is 1 mg/kg.
- Zinc concentrations ranged from 25.7 mg/kg for Composite Site G to 85.5 mg/kg for Composite Site F. The ERL for zinc is 150 mg/kg.

### **Organics**

Concentrations of organics in sediment samples did not exceed their respective screening levels.

- Total recoverable petroleum hydrocarbons (TRPH) ranged from non-detect (RL=15 mg/kg) at Composite Site C to a maximum concentration of 210 mg/kg at Composite Site J.
- TOC ranged from 0.4 percent to 0.84 percent.
- Total DDTs were only detected at Composite Sites G and J at levels less than 1.1 µg/kg.
- Other Pesticides were undetectable at all sites.
- Total PAH concentrations at five sites were not detectable, while at the other six sites (Composite Sites D, F, G, I, J, and K), values ranged from 27.1 to 270 µg/kg which is well below the ERL of 4,022 µg/kg.
- Phenol was only detected at Composite Site K at a level of 8.3 µg/kg.
- Phthalates were detected at all sites, with Bis(2-Ethylhexyl) Phthalate values ranging from 27 to 340 µg/kg.
- Monobutyltin, tetrabutyltin, and tributyltin were not detected at any site, while dibutyltin was detected at all sites except for Composite Sites F and K, with concentrations ranging from 1.6 to 8.4 µg/kg. The Puget Sound Dredge Disposal Analysis program (PSDDA) screening level for tributyltin is 73 µg/kg.
- Total PCBs were detected at six sites (A, F, G, I, J, and K), with a maximum concentration of 7.95 µg/kg, which is well below the ERL of 22.7 µg/kg.

### 3.1.2 Elutriate Chemistry Results

The elutriate test is designed to simulate release of contaminants from sediment during dredged material disposal. Release can occur by physical processes or a variety of chemical changes such as oxidation of metal sulfides and release of contaminants adsorbed to particles or organic matter. The elutriate results were compared to Criteria Maximum Concentration (CMC) and Criterion Continuous Concentration (CCC) (e.g., the California Toxics Rule) for twenty-two constituents (ten metals, eleven pesticides, and pentachlorophenol). The CMC is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CCC is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect. (USEPA 2000). The criteria are not rules and they do not have regulatory impact. Rather, these criteria present scientific data and guidance of the environmental effects of pollutants which can be useful to derive regulatory requirements based on considerations of water quality impacts. Elutriate results are summarized in Table 8. Copies of reports from the chemistry laboratory containing the elutriate results and case narratives are included in Appendix C.

#### Metals

Four metals were detected; arsenic, copper, selenium, and zinc. Arsenic and selenium values were below CCC criteria, while copper and zinc were detected above criteria values and include:

- Copper exceeded the CCC at Composite Sites A, B, E, and H, while at Composite Sites C, D, I, and J, copper values exceeded the CMC (Table 8). Note that the bulk chemistry copper concentration for these composite sites did not exceed 8.89 mg/kg, which is well below the ERL of 34 mg/kg.
- Zinc exceeded the CMC at Composite Site A. Note that the bulk chemistry zinc concentration for Composite Site A was 26.0 mg/kg, which is well below the ERL of 150 mg/kg.

#### Organics

Organics elutriate samples with criteria values were undetectable; however, the reporting limits for several exceeded at least one screening level and included, aldrin, gamma-BHC, and pentachlorophenol (see Appendix C). Other organics such as pesticides and PAHs without criteria were not detected (Table 8).

Concentration of other organics that were detected and include:

- Phenol was detected in Composite Sites D, E, and G, with values ranging from 0.09 to 0.223 µg/L.,
- Phthalates were generally detected in all samples and included bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, and diethyl phthalate.
- PCBs (PCB056) were only detected in Composite Site I at a level of 0.0012 µg/L.



**Table 8. Elutriate Chemistry Results.**

	UNITS	CMC	CCC	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
<b>Metals</b>														
Arsenic	µg/L	69	36	9.22	13.7	7.50	14.1	23.4	ND	ND	9.16	9.07	10.7	ND
Cadmium	µg/L	40	8.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	µg/L	4.8	3.1	<b>4.38</b>	<b>4.58</b>	<b>4.92</b>	<b>5.45</b>	<b>4.32</b>	ND	ND	<b>4.59</b>	<b>5.20</b>	<b>5.68</b>	ND
Lead	µg/L	210	8.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	µg/L	1.8	0.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	µg/L	74	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	µg/L	290	71	ND	ND	ND	39.4	37.6	12.3	34.0	ND	ND	ND	13.0
Silver	µg/L	1.9		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	µg/L	90	81	<b>463</b>	9.53	5.15	11.3	51.5	9.43	78.8	8.59	78.7	6.00	13.1
<b>Pesticides</b>														
2,4'-DDD	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDE	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4'-DDT	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	µg/L	0.13	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	µg/L	1.3		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Chlordane	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	µg/L	0.09	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-nonachlor	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	µg/L	0.71	0.0019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	µg/L	0.034	0.0087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	CMC	CCC	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
Endosulfan II	µg/L	0.034	0.0087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/L	0.037	0.0023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma Chlordane	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC	µg/L	0.16		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	µg/L	0.053	0.0036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	µg/L	0.053	0.0036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxychlordane	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	µg/L	0.21	0.0002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Synthetic Pyrethroids</b>														
Allethrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Bifenthrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Cyfluthrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Cypermethrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Deltamethrin/Tralomethrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Fenpropathrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Fenvalerate/Esfenvalerate	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Fluvalinate	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Permethrin (cis/trans)	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Phenothrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Resmethrin/Bioresmethrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND

	UNITS	CMC	CCC	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
Tetramethrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
lambda-Cyhalothrin	µg/L			ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
<b>PAHs</b>														
1-Methylnaphthalene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (a) Anthracene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (a) Pyrene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (b) Fluoranthene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (g,h,i) Perylene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (k) Fluoranthene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz (a,h) Anthracene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno (1,2,3-c,d) Pyrene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodimethylamine	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Phenols</b>														
2,4,5-Trichlorophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	CMC	CCC	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
2,4-Dinitrophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3/4-Methylphenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-Methylphenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	µg/L	13	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	µg/L			ND	ND	ND	0.096	0.23	ND	0.13	ND	ND	ND	ND
<b>Phthalates</b>														
Bis(2-Ethylhexyl) Phthalate	µg/L			1.0	0.15	0.14	0.23	0.22	ND	0.23	0.27	0.13	0.16	0.14
Butyl Benzyl Phthalate	µg/L			0.16	0.21	0.26	1.2	0.79	0.19	0.58	0.26	0.12	0.29	0.39
Diethyl Phthalate	µg/L			0.095	0.11	0.12	0.29	0.27	0.067	0.27	0.092	0.088	0.13	0.13
Dimethyl Phthalate	µg/L			ND	ND	ND	0.15	0.10	ND	0.13	0.050	ND	ND	0.089
Di-n-Butyl Phthalate	µg/L			ND	ND	ND	0.19	0.23	ND	0.19	0.083	ND	0.087	0.12
Di-n-Octyl Phthalate	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>PCB</b>														
PCB003	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB005/008	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB015	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB018	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB027	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB028	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB029	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB031	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB033	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB037	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	CMC	CCC	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
PCB044	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB049	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB052	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB056	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	0.0012	ND	ND
PCB060	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB066	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB070	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB074	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB077	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB081	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB087	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB095	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB097	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB099	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB101	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB105	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB110	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB114	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB118	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB119	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB123	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB126	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB128	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB132/153	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB137	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB138/158	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB141	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB149	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	UNITS	CMC	CCC	Comp A	Comp B	Comp C	Comp D	Comp E	Comp F	Comp G	Comp H	Comp I	Comp J	Comp K
PCB151	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB156	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB157	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB167	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB168	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB169	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB170	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB174	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB177	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB180	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB183	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB184	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB187	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB189	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB194	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB195	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB200	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB201	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB203	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB206	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB209	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs	µg/L			ND	ND	ND	ND	ND	ND	ND	ND	0.0012	ND	ND

Notes:

ND - not detected above the reporting limit presented in Table 5. Some analytes are reported that were detected at a concentration below the reporting limit and above the laboratory method detection limit. See Calscience report in Appendix C for all estimated values.

NA – not analyzed

mg/L – milligrams per liter

µg/L – micrograms per liter

ND - not detected (at reported detection limited)

CMC - CA Toxics Rule, Criteria Maximum Concentration (shaded boxes exceed CMC)

CCC - CA Toxics Rule, Criterion Continuous Concentration (bold concentration exceeds CCC)

#### 4.0 SUITABILITY RECOMMENDATIONS

Beneficial reuse options are necessary given the potential impacts to eelgrass habitat from the proposed dredging. Therefore, the project is proposing to create new eelgrass habitat by filling areas currently too deep to support eelgrass. The intent of this characterization study was to determine the suitability of the proposed dredged material to serve as fill, as well as, to characterize the potential beneficial reuse/disposal sites. Construction plans for the project are provided in Appendix D. The plans call for the finer sediment from Dredge Area 12 to be used as fill at the bottom of the Sail Bay borrow pit reuse areas with a cover of sandier material to be placed on top of the fines on order to support eelgrass restoration.

Dredged material from proposed dredge areas appear suitable for aquatic disposal for beneficial reuse in eelgrass restoration and beach nourishment based on the following results:

- Grain size results indicate that the majority of the sediments to be dredged are composed primarily of fine sand, with one site (Composite Site G) that is characterized as medium-grained sand (Table 9). With the exception of Composite Sites B and F, the percent sand is greater than 80 percent. For Composite Site B, the percent sand is approximately 76 percent, while the percent sand for Composite Site F is approximately 60 percent. For beach nourishment, all proposed dredge area areas with the exception of Composite Site F are composed of greater than 76 percent sand and have a grain size that would be compatible with potential receiver sites. Only sands from Composites D (82 percent sand) and E (89 percent sand) are proposed for adjacent beach replenishment in Composite A areas (84 percent sand) and thus materials are considered to be compatible
- Low concentrations of chemical analytes in composite area sediment samples. No chemical analytes above ERM guideline values (Table 9), and only two above their respective ERL values suggesting that adverse effects would generally not be expected.
- Low concentrations of chemical analytes in composite area elutriate samples (Table 9). Few chemical analytes (copper and zinc) were above their respective CCC values for several composite samples, as well as, several samples which exceeded the CMC value. Note that the bulk chemistry concentrations for those analytes indicated relatively low levels (well below the ERL values). In addition, the presence of analytes (i.e., copper) exceeding criteria for other samples suggests that copper may be prevalent in the site water, but given the low concentrations observed in the bulk sediment chemistry, it does not appear that there would be any potential effects.
- Potential disposal/reuse sites contained low concentrations of chemical analytes in composite area sediment samples, with only one analyte (arsenic) exceeding the ERL at Composite Site J, and similar to the dredge areas, composite elutriate samples from the proposed disposal/reuse sites had copper levels that exceeded the CMC/CCC values despite relatively low bulk chemistry results. However, as noted above, it does not appear that there would be any potential effects from disposing of dredge material in the proposed reuse locations.

Based on chemical and physical testing results, in combination with the anticipated reuse construction methodology (i.e., cap finer material with sand and transplant eelgrass), sediments from the proposed dredge footprint appear suitable for confined aquatic disposal.

**Table 9. Summary Results.**

Composite	Dredge Areas	Sand (%)	Description	Mean Grain Size (mm)	Exceed ERL/ERM Criteria	Exceed CCC/CMC Criteria
<b>Dredge Areas</b>						
Composite A	1A, 1B, 1C, 1D	83.86	Fine Sand	0.169	No	Copper (CCC) Zinc (CMC)
Composite B	2, 3, 4	76.22	Fine Sand	0.134	No	Copper (CCC)
Composite C	6, 7	87.41	Fine Sand	0.221	No	Copper (CMC)
Composite D	8, 9, 11, 15	81.56	Fine Sand	0.202	Mercury (ERL)	Copper (CMC)
Composite E	10	88.88	Fine Sand	0.232	No	Copper (CCC)
Composite F	12	60.10	Fine Sand	0.168	Arsenic (ERL)	No
Composite G	13, 14	80.83	Medium Sand	0.270	No	No
Composite K	5	87.73	Fine Sand	0.196	No	No
<b>Disposal/Reuse Site</b>						
Composite H	Reuse West 1, 2, 3, 4	57.64	Very Fine Sand	0.112	No	Copper (CCC)
Composite I	Reuse West 5, 6, 7	64.59	Fine Sand	0.137	No	Copper (CMC)
Composite J	Leisure Lagoon	22.71	Silt	0.044	Arsenic (ERL)	Copper (CMC)
<b>Beach Receiver Site</b>						
	Crown Point 1-1	97.09	Medium Sand	0.433	NA	NA
	Crown Point 1-2	97.00	Medium Sand	0.375	NA	NA
	Crown Point 2-1	96.97	Fine Sand	0.199	NA	NA
	Crown Point 2-2	99.00	Medium Sand	0.385	NA	NA
	Beach Reuse Area 10-1	99.05	Medium Sand	0.303	NA	NA
	Beach Reuse Area 10-2	97.42	Medium Sand	0.270	NA	NA

Notes:

- ERL - Effects Range Low
- ERM - Effects Range Median
- CMC - Criteria Maximum Concentration
- CCC - Criterion Continuous Concentration



## 5.0 REFERENCES

- American Public Health Association, American Water Works Association, and Water Environment Federation. 1995. Standard Methods for the Examination of Water and Wastewater. 19th Edition. Edited by A.D. Eaton, L.S. Clesceri, and A.E. Greenberg. Washington, DC.
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- Long, E.R., D.L. MacDonald, S.L. Smith, and F.D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentration in Marine and Estuarine Sediments. *Environmental Management* 19 (1): 81-97.
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- U.S. Environmental Protection Agency (USEPA). 2000. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California. 40 CFR Part 131.
- United States Environmental Protection Agency (USEPA). 1986-1996. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. Revision 3 (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 95), and III (December 96). SW-846.
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**APPENDIX J**  
**PUBLIC NOTICE**

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THE CITY OF SAN DIEGO

DATE OF NOTICE: January 6, 2017

NOTICE OF APPLICATION

DEVELOPMENT SERVICES DEPARTMENT

As a property owner, tenant, or person who has requested notice, you should know that an application has been filed with the City of San Diego for a Site Development Permit (Process CIP-Five) for work within Environmentally Sensitive Lands (Biological Impacts) for maintenance dredging within Mission Bay, reuse of dredged sediment, and temporary staging areas. The project will utilize floating barges and other low impact equipment and methods to minimize impacts to resources. A total of 63 acres of dredging would occur within 14 dredge sites, creating 122,000 to 220,850 cubic yard of dredge material which will be reused on-site. Project staging would occur in proximity to the south shore launch ramp and will be located on a portion of City owned property at 2595 Ingraham Street. The project location lies within the California Coastal Commission Permit Jurisdiction and Deferred Certification Area, Council District 2.

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PROJECT NO: 520687  
 PROJECT NAME: MISSION BAY NAVIGATIONAL SAFETY DREDGING  
 PROJECT TYPE: SITE DEVELOPMENT PERMIT, PROCESS CIP-FIVE  
 APPLICANT: PUBLIC WORKS DEPARTMENT - JAMES ARNHART  
 COMMUNITY PLAN AREA: MISSION BEACH, PACIFIC BEACH, MISSION BAY PARK  
 COUNCIL DISTRICT: 2  
 CITY PROJECT MANAGER: Angela Nazareno, Development Project Manager  
 PHONE NUMBER/E-MAIL: (619) 446-5277 / [ANazareno@sanidiego.gov](mailto:ANazareno@sanidiego.gov)

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The decision to approve or deny this application will be made at a public hearing. You will receive another notice informing you of the date, time, and location of the public hearing. This project is undergoing environmental review.

Please note that Community Planning Groups provide citizens with an opportunity for involvement in advising the City on land use matters. Community Planning Group recommendations are integral components of the project review process. You may contact **David Moty, Chair of the Community Planners Committee** at (619) 255-2882 to inquire about the community planning group meeting dates, times, and location for community review of this project.

If you have any questions about the project after reviewing this information, you may contact the City Project Manager listed above. This information will be made available in alternative formats upon request.

Internal Order No.: B-10163.02.06 CNS-2960184#



Mission Bay Navigational Safety Dredging  
 Appendix J - Public Notice

**APPENDIX K**  
**LONG-TERM REVEGETATION MAINTENANCE AGREEMENT**

## 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT

This Long-Term Revegetation Maintenance Contract (60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT) is made and entered into by and between the City of San Diego (City), a municipal corporation, and INSERT NAME OF CONTRACTOR - TO BE IDENTIFIED AFTER AWARD (Contractor), who may be individually or collectively referred to herein as a "Party" or the "Parties."

### RECITALS

- A. Concurrent with execution of this 60-Month Revegetation Maintenance And Monitoring Agreement, the Parties entered into a general contract (Construction Contract) for the construction of Mission Bay Navigational Safety Dredging (Project), WBS B-10163, Bid No. **K-18-1576-DBB-3**.
- B. In accordance with the Construction Contract, the Contractor shall enter into this contract with the City for the purpose of implementing and fulfilling 60-MONTH REVEGETATION MAINTENANCE AND MONITORING requirements in accordance with the City of San Diego Municipal Code and the Contract Documents for the specified elopement(s) of Mission Bay Navigational Safety Dredging (Maintenance Requirements). The performance of the terms of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall commence immediately upon completion of performance of the Construction Contract.
- C. The Contractor is ready and willing to fulfill its maintenance requirements in accordance with the terms of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby set forth their mutual covenants and understandings as follows:

### INTRODUCTORY PROVISIONS

- A. **Recitals Incorporated.** The above referenced Recitals are true and correct and are incorporated into this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT by this reference.
- B. **Exhibits Incorporated.** All Exhibits and Attachments referenced in this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT are incorporated into this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT by this reference.
- C. **Contract Term.** This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall be effective upon completion of the Plant Establishment Period as

described in SECTION 6-1.1 of the Construction Contract, and it shall be effective until completion of the Work, described in Section 1.1 below.

**D. Terms and Conditions.** This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT is subject to the terms and conditions of the Construction Contract, Eelgrass Mitigation and Monitoring Plan and the Eelgrass Planting Technical Specifications, except as follows.

**E. Partial Release of Payment Bond and Performance Bond**

**1. Performance of Contract in Two Phases.** There are two separate phases of work to be performed by the Contractor under this Contract. The first phase covers the work involved in the original agreement as described in this agreement ("Phase 1 Work"). The second phase covers the work involved in the long-term maintenance of the eel grass contained within the planting Area after Phase 1 Work has been completed ("Phase 2 Work").

**2. Bond Handling for Contract Phases.** The Payment Bond and the Performance Bond covering Phase 1 Work on this Contract shall remain in full force and effort until completion of that phase is certified. The original Payment Bond and the original Performance Bond covering Phase 1 Work on this Contract shall continue in full force and effort for Phase 2 Work, however the value of each bond may be reduced as follows:

i. Completion by the Contractor of all Phase 1 Work shall be evidenced solely by the City Engineer affirming in writing that to the best of their knowledge that all Phase 1 Work has been completed by the Contractor in strict conformity with all City-approved plans and revisions, and that the Phase 1 Work completed by the Contractor meets all applicable standards ("Notice of Completion").

ii. Upon issuance by the City Engineer of the Notice of Completion for Phase 1 Work, the Payment guarantee provided under the Payment Bond for this Project, and the Performance guarantee provided under the Performance Bond for this Project, may be partially released, and thereby reduced, to an amount sufficient to cover all Phase 2 Work on this Project, with the remaining value of each bond type to be set and maintained through the date of completion of Phase 2 Work at a value not less than                      Percent (          %) of the Project's highest bond value for each bond type, but under no circumstances to be reduced to less than the actual cost of completion of all Phase 2 Work for this Project, whichever is higher ("Partial Bond Release").

**3. No Partial Release Upon Default.** No Partial Performance Bond Release and Reduction shall be given to the Contractor if the Performance Bond and/or this Agreement is in default.

## SECTION 1 - MAINTENANCE CONTRACT SUMMARY

- 1.1. General.** The Contractor shall fulfill the Project's Maintenance Requirements (Work) as identified in the scope of work attached as Exhibit A in a manner satisfactory to the City.

The Contractor shall provide all equipment, labor, and materials necessary to perform the **Work** as described in the written in Exhibit A, at the direction of the City.

- 1.2. Work Schedule.** After receiving notification from the City, the Contractor shall create a comprehensive schedule of Work for performance of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT (Schedule) for the City's approval.

The City will approve the Schedule prior to the commencement of the Work. The City may require the Contractor to revise the Schedule. The Contractor shall not revise the Schedule unless the revisions have received the prior written approval of the City.

- 1.3. Commencement of Work & Maintenance Period.** This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall commence when the City approves of the Plant Establishment Period and sends notice of the approval to the Contractor in accordance with **EELGRASS PLANTING TECHNICAL SPECIFICATIONS and EELGRASS MITIGATION AND MONITORING PLAN** and shall continue for **60** months. A copy of the approval form is attached as Exhibit B.

- 1.4. Performance of Work.** The Work shall be performed in accordance with the manufacturer's **recommendations** for each piece of equipment used in performance by the Contractor of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.

- 1.5. License.** The Contractor shall hold the following licenses in good standing:

- a) Registration with the County Agriculture Commission.
- b) City of San Diego Business License.

Prior to performing the Work, the Contractor shall complete and submit to the City the License Data Sheet. See Exhibit C.

- 1.6. Hours of Performance.** The Contractor shall perform the Work between the hours of 7:00 a.m. and 3:30 p.m., Monday through Friday (Working Hours). The City may, in its sole discretion, grant permission to Contractor to perform Work during non-Working Hours. Maintenance functions that generate excess noise, e.g., operations of power equipment which would cause annoyance to area residents, shall not begin before 7:00 a.m.

## SECTION 2 - ADMINISTRATION

- 2.1. Contract Administrator.** The Public Works Department is the Contract Administrator for the 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT. The Contractor shall perform the Work under the direction of a designated representative of

the Public Works Department. The City will communicate with the Contractor on all matters related to the administration of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT and the Contractor's performance of the Work rendered hereunder. When this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT refers to communications to or with City, those communications shall be with the City, unless the City or this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT specifies otherwise. Further, when this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT requires an act or approval by City, that act or approval will be performed by the City.

- 2.2. Local Office.** The Contractor shall maintain a local office with a competent company representative who can be reached during Normal Working Hours and who is authorized to discuss matters pertaining to this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT with the City. A local office is one located in San Diego County that can be reached by telephone and facsimile. An answering service in conjunction with a company email address for the designated company representative would fulfill this requirement. A mobile telephone shall not fulfill the requirement for a local office. All calls to the Contractor from the City shall be returned within a 1-hour period.
- 2.3. Emergency Calls.** The Contractor shall have the capability to receive and to respond immediately to calls of an emergency nature. The City shall refer emergency calls to Contractor for immediate disposition. The Contractor shall provide City with a 24 hour emergency telephone number for this purpose.
- 2.4. Staffing.** The Contractor shall furnish sufficient supervisory and working personnel capable of promptly accomplishing on schedule, and to the satisfaction of City, all Work required under this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.
- 2.5. Contractor Inspections.** The Contractor shall perform inspections of the Work site and prepare and submit to the City a Punchlist and dates of correction. The Punchlist shall include a comprehensive report of Work performed at the Work site to ensure 80% cover.

### **PART 3: WORK SITE MAINTENANCE**

- 3.1. Satisfactory Progression.** If the Revegetation Area is not progressing towards the required 80% Cover, as defined in the Scope of Work, in accordance with the Work Schedule, as determined by City, City may adjust monthly payments to Contractor accordingly.

### **SECTION 4: COMPENSATION**

- 4.1. Maximum Compensation.** The compensation for this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall not exceed **\$CONTRACTOR'S LUMP SUM BID AMOUNT FOR THIS 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT - TO BE ESTABLISHED DURING THE AWARD PROCESS. SEE**



**2015 WHITEBOOK, Part 1, SECTION 800- 802 AND EELGRASS PLANTING TECHNICAL SPECIFICATIONS.** (Contract Price).

- 4.2. Wage Rates.** Refer to the Construction Contract for Prevailing wages requirements for this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.
- 4.3. Method of Payment and Reports.** The payments will be made monthly in direct proportion that each month bears to the total value of the Contract Price. As conditions precedent to payment, the Contractor shall submit every month a detailed invoice and report of maintenance work performed. The Contractor's failure to submit the required reports or certified payrolls as described in the Construction Contract shall constitute a basis for withholding of payment by the City.
- 4.4. Final Payment.** The Contractor shall not receive the final payment until the following conditions have been completed to the City's satisfaction:

The item(s) of the work subject to this maintenance coverage as specified in Exhibit A (Maintenance Items) have been determined to be in compliance with the Construction Contract and this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.

The Contractor has provided to the City a signed and notarized Affidavit of Disposal, a copy of which is attached to the Construction Contract, stating that all brush, trash, debris, and surplus materials resulting from the Work have been disposed of in a legal manner.

The Contractor has performed comprehensive and successful testing and checks of the Maintenance Items.

**SECTION 5: BONDS AND INSURANCE**

- 5.1. Contract Bonds.** Prior to commencement of the Work, Contractor, at its sole cost and expense, shall provide to City the following bonds issued by a surety authorized to issue bonds in California and otherwise satisfactory to City:

A Payment Bond (Material and Labor Bond) in an amount not less than the Contract Price, to satisfy claims of material suppliers and mechanics and laborers employed by it on the Work. The Payment Bond shall be maintained by the Contractor in full force and effect until the Work is accepted by City and until all claims for materials and labor are paid, and shall otherwise comply with the California Civil Code.

A Performance Bond in an amount not less than the Contract Price to guarantee faithful performance of all Work, within the time prescribed, in a manner satisfactory to the City, and that all materials and workmanship will be free from original or developed defects. The Performance Bond shall remain in full force and effect until performance of the Work is completed as set forth in this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.

- 5.2. Insurance.** At all times during the term of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, the Contractor shall maintain insurance coverage as specified in the Construction Contract, Section 7-3, "INSURANCE."

The Contractor shall not begin the Work under this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT until it has complied with the following:

- a) Obtain insurance certificates reflecting evidence of insurance as specified in the Construction Contract , Section 7-3, "INSURANCE" for:
  1. Commercial General Liability
  2. Commercial Automobile Liability
  3. Worker's Compensation
- b) Confirm that all policies contain the specific provisions required in Section 7-3, "INSURANCE."

The Contractor shall submit copies of any policy upon request by the City.

The Contractor shall not modify any policy or endorsement thereto which increases the City's exposure to loss for the duration of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.

## **SECTION 6: MISCELLANEOUS**

- 6.1.** Illness and Injury Prevention Program. The Contractor shall comply with all the mandates of Senate Bill 198 and specifically shall have a written Injury Prevention Program on file with the City in accordance with all applicable standards, orders, or requirements of California Labor Code, Section 6401.7. This Program shall be on file prior to performance of any Work.
- 6.2.** City Standard Provisions. This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT is subject to the following standard provisions:
1. WHITEBOOK, Section 7-13.3, Drug-Free Workplace (As adopted pursuant to City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace).
  2. WHITEBOOK, Section 7-13.2, Americans with Disabilities (As adopted pursuant to City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act).
  3. WHITEBOOK, Section 7-13.4, Contractor Standards and Pledge of Compliance (As adopted pursuant to City of San Diego Municipal Code §22.3224 as amended 11/24/08 by ordinance O-19808 for Pledge of Compliance).

4. WHITEBOOK, Section 7-13.6.1, Notice of Labor Compliance Program Approval (As adopted pursuant to the City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776 (Stats. 1978, Ch. 1249)).
5. WHITEBOOK, Section 7-13.7, Apprentices on Public Works (As adopted pursuant to Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.
6. WHITEBOOK, Section 7-13.5, Equal Benefits (As adopted pursuant to the City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code.
7. WHITEBOOK, Section 2-17, Information Security Policy (As adopted pursuant to the City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

**6.3. Taxpayer Identification Number.** I.R.S. regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide services or products to the City. This information is necessary to complete Form 1099 at the end of each tax year. As such, the Contractor shall provide the City with a Form W-9 upon execution of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.

**6.4. Assignment.** The Contractor shall not assign the obligations under this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, whether by express assignment or by sale of the company, nor any monies due or to become due, without City's prior written approval. Any assignment in violation of this Section shall constitute a Default and is grounds for immediate termination of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, at the sole discretion of City. In no event shall any putative assignment create a contractual relationship between City and any putative assignee.

**6.5. Independent Contractors.** The Contractor and any Subcontractors employed by Contractor shall be independent contractors and not agents of City. Any provisions of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT that may appear to give City any right to direct Contractor concerning the details of performing the Work, or to exercise any control over such performance, shall mean only that Contractor shall follow the direction of City concerning the end results of the performance.

**6.6. Covenants and Conditions.** All provisions of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT expressed as either covenants or conditions on the part of the City or the Contractor shall be deemed to be both covenants and conditions.

- 6.7. Jurisdiction, Venue, and Attorney's Fees.** The jurisdiction and venue for any suit or proceeding arising out of or concerning this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, the interpretation or application of any of its terms, or any related disputes shall be the County of San Diego, State of California.
- 6.8. Successors in Interest.** This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT and all rights and obligations created by this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall be in force and effect whether or not any Parties to this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT have been succeeded by another entity, and all rights and obligations created by this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall be vested and binding on any Party's successor in interest.
- 6.9. Integration.** This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT and the exhibits, attachments, and references incorporated into this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT fully express all understandings of the Parties concerning the matters covered in this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT. No change, alteration, or modification of the terms or conditions of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, and no verbal understanding of the Parties, their officers, agents, or employees shall be valid unless made in the form of a written change agreed to in writing by both Parties or an amendment to this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT agreed to by both Parties. All prior negotiations and agreements are merged into this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT.
- 6.10. Counterparts.** This 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT may be executed in counterparts, which when taken together shall constitute a single signed original as though all Parties had executed the same page.
- 6.11. No Waiver.** No failure of either the City or the Contractor to insist upon the strict performance by the other of any covenant, term or condition of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, shall constitute a waiver of any such breach or of such covenant, term or condition. No waiver of any breach shall affect or alter this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT, and each and every covenant, condition, and term hereof shall continue in full force and effect to any existing or subsequent breach.
- 6.12. Severability.** The unenforceability, invalidity, or illegality of any provision of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT shall not render any other provision of this 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT unenforceable, invalid, or illegal.

**AT LEAST 1 PARAGRAPH OF THIS 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT MUST BE ON SAME PAGE SIGNATURES.**

**6.13. Signing Authority.** The representative for each Party signing on behalf of a corporation, partnership, joint venture or governmental entity hereby declares that authority has been obtained to sign on behalf of the corporation, partnership, joint venture, or entity and agrees to hold the other Party or Parties hereto harmless if it is later determined that such authority does not exist.

IN WITNESS WHEREOF, this Contract is executed by the City of San Diego, acting by and through its Public Works Department Director in accordance with Resolution No. R-**INSERT NUMBER OF RESOLUTION AUTHORIZING ADVERTISING AND AWARD OF THE UNDERLYING CONSTRUCTION CONTRACT**, and by Contractor.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, **INSERT YEAR.**

THE CITY OF SAN DIEGO

By: \_\_\_\_\_  
Mayor or designee

I HEREBY CERTIFY I can legally bind **NAME OF CONTRACTOR TO BE DETERMINED DURING AWARD PROCESS** and that I have read this entire contract, this \_\_\_\_\_ day of \_\_\_\_\_, **INSERT YEAR.**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

I HEREBY APPROVE the form of the foregoing Contract this

\_\_\_\_\_ day \_\_\_\_\_ of **INSERT YEAR.**

Mara W. Elliott, City Attorney

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Deputy City Attorney

## EXHIBIT A

### SCOPE OF WORK

- I. **Location of Work.** The location of the Work to be performed (Revegetation Area) is shown on those Specifications and Drawings numbered **39721-01-D** through **39721-15-D**, which are incorporated into this contract by this reference as though fully set forth herein.
- II. **Description of Work.** See **APPENDIX G - *Eelgrass Mitigation and Monitoring Plan***
- III. **Method of Performing Work.** See **APPENDIX G - *Eelgrass Mitigation and Monitoring Plan***

**EXHIBIT B**

**INSERT A COPY OF THE ENGINEER'S FIELD NOTIFICATION WHICH ESTABLISHES THE COMMENCEMENT DATE OF THE MONITORING PROGRAM, EELGRASS PLANTING TECHNICAL SPECIFICATIONS AND EELGRASS MITIGATION AND MONITORING PLAN**

**EXHIBIT C**

**LICENSE DATA SHEET**

**State Contractor License Classification and Number:** \_\_\_\_\_

Name of License Holder: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

**Pest Control Applicator's Name:** \_\_\_\_\_

License Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

**Pest Control Advisor's Name:** \_\_\_\_\_

License Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

**City of San Diego Business License Number:** \_\_\_\_\_

Expiration Date: \_\_\_\_\_



**ATTACHMENT F**  
**INTENTIONALLY LEFT BLANK**

**ATTACHMENT G**  
**CONTRACT AGREEMENT**

## CONTRACT AGREEMENT

---

### CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and Curtin Maritime Corporation, herein called "Contractor" for construction of **Mission Bay Navigational Safety Dredging**; Bid No.**K-18-1576-DBB-3**; in the amount of Six million Four Hundred Seventy Thousand Three Hundred Thirty-One Dollars and Zero Cents (\$6,470,331.00), which is comprised of the Base Bid.

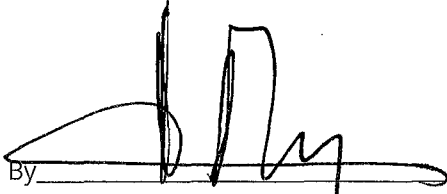
IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:
  - (a) The attached Faithful Performance and Payment Bonds.
  - (b) The attached Proposal included in the Bid documents by the Contractor.
  - (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).
  - (d) Long Term Revegetation Maintenance Agreement.
  - (e) That certain documents entitled **Mission Bay Navigational Safety Dredging**, on file in the office of the Public Works Department as Document No. **B-10163**, as well as all matters referenced therein.
2. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **Mission Bay Navigational Safety Dredging**, Bid No. **K-18-1576-DBB-3**, San Diego, California.
3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.
4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
5. This contract is effective as of the date that the Mayor or designee signs the agreement.

CONTRACT AGREEMENT (continued)

IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code §22.3102 authorizing such execution.

THE CITY OF SAN DIEGO

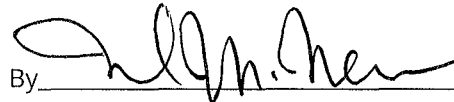
By 

Print Name: Albert P. Rechany  
Deputy Director  
Public Works Contracts

Date: 11/20/17

APPROVED AS TO FORM

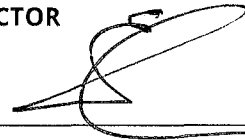
Mara W. Elliott, City Attorney

By 

Print Name: Mark H. Mercer  
Deputy City Attorney

Date: 11/27/17

CONTRACTOR

By 

Print Name: STEVEN CHEW

Title: VIC. PRESIDENT

Date: 10-10-17

City of San Diego License No.: B2017011658

State Contractor's License No.: 969007

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000020463

## CERTIFICATIONS AND FORMS

**The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certifications, forms and affidavits submitted as part of this bid are true and correct.**

## **Bidder's General Information**

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23  
UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

State of California

County of San Diego

The bidder, being first duly sworn, deposes and says that he or she is authorized by the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

## CONTRACTOR CERTIFICATION

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### DRUG-FREE WORKPLACE

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 7-13.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.



## CONTRACTOR CERTIFICATION

---

### AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the American With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 7-13.2, "American With Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

## **CONTRACTOR CERTIFICATION**

---

### **CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE**

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 7-13.4, ("Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors whose subcontracts are greater than \$50,000 in value has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3004.

**AFFIDAVIT OF DISPOSAL**

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

**WHEREAS**, on the \_\_\_\_\_ DAY OF \_\_\_\_\_, 2\_\_\_\_\_ the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

**Mission Bay Navigational Safety Dredging**

(Name of Project or Task)

as particularly described in said contract and identified as Bid No.**K-18-1576-DBB-3**; SAP No. (WBS/IO/CC) **B-10163**; and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

**NOW, THEREFORE**, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

and that they have been disposed of according to all applicable laws and regulations.

Dated this \_\_\_\_\_ DAY OF \_\_\_\_\_, \_\_\_\_\_.

By: \_\_\_\_\_  
Contractor

**ATTEST:**

State of \_\_\_\_\_ County of \_\_\_\_\_

On this \_\_\_\_\_ DAY OF \_\_\_\_\_, 2\_\_\_\_\_, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

## CONTRACTOR CERTIFICATION

---

### Equal Benefits Ordinance Certification

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance.

**LIST OF SUBCONTRACTORS**

**\*\*\* PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY \*\*\* TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY \*\*\* SEE INSTRUCTIONS TO BIDDERS, FOR FURTHER INFORMATION**

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSBO	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNERSHIP
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone _____ Email: _____							
Name _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							

- ① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- |   |        |  |         |
|---|--------|--|---------|
| Certified Minority Business Enterprise        | MBE    | Certified Woman Business Enterprise            | WBE     |
| Certified Disadvantaged Business Enterprise   | DBE    | Certified Disabled Veteran Business Enterprise | DVBE    |
| Other Business Enterprise                     | OBE    | Certified Emerging Local Business Enterprise   | ELBE    |
| Certified Small Local Business Enterprise     | SLBE   | Small Disadvantaged Business                   | SDB     |
| Woman-Owned Small Business                    | WoSB   | HUBZone Business                               | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB |  |         |
- ② As appropriate, Bidder shall indicate if Subcontractor is certified by:
- |  |        |  |          |
|--|--------|--|----------|
| City of San Diego                                    | CITY   | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission               | CPUC   |  |          |
| State of California's Department of General Services | CADoGS | City of Los Angeles                              | LA       |
| State of California                                  | CA     | U.S. Small Business Administration               | SBA      |

**The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.**

**NAMED EQUIPMENT/MATERIAL SUPPLIER LIST**

\*\*\* PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY \*\*\* TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY \*\*\* SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES (MUST BE FILLED OUT)	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB <sup>①</sup>	WHERE CERTIFIED <sup>②</sup>
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						

- ① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE,SLBE and ELBE):
- |   |        |  |         |
|---|--------|--|---------|
| Certified Minority Business Enterprise        | MBE    | Certified Woman Business Enterprise            | WBE     |
| Certified Disadvantaged Business Enterprise   | DBE    | Certified Disabled Veteran Business Enterprise | DVBE    |
| Other Business Enterprise                     | OBE    | Certified Emerging Local Business Enterprise   | ELBE    |
| Certified Small Local Business Enterprise     | SLBE   | Small Disadvantaged Business                   | SDB     |
| Woman-Owned Small Business                    | WoSB   | HUBZone Business                               | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB |  |         |
- ② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:
- |  |        |  |          |
|--|--------|--|----------|
| City of San Diego                                    | CITY   | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission               | CPUC   |  |          |
| State of California's Department of General Services | CADoGS | City of Los Angeles                              | LA       |
| State of California                                  | CA     | U.S. Small Business Administration               | SBA      |

**The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.**

## ELECTRONICALLY SUBMITTED FORMS

### **THE FOLLOWING FORMS MUST BE SUBMITTED IN PDF FORMAT WITH BID SUBMISSION**

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

- A. **BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**
  
- B. **CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**

**Bids will not be accepted until ALL forms are submitted as part of the bid submittal**

BID BOND

See Instructions to Bidders, Bidder Guarantee of Good Faith  
(Bid Security)

KNOW ALL MEN BY THESE PRESENTS,

That Curtin Maritime Corporation as Principal, and  
Berkley Insurance Company as Surety, are

held and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the bidding schedule(s) of the OWNER's Contract Documents entitled

Mission Bay Navigation Safety Dredging Bid No. K-18-1576-DBB-3

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" enters into a written Agreement on the form of agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 29th day of August, 2017

Curtin Maritime Corporation (SEAL)

Berkley Insurance Company (SEAL)

(Principal)

(Surety)

By: Kelly Curtin

By: Roxana Palacios

(Signature)

Roxana Palacios, Attorney-in-Fact  
(Signature)

Surety Phone No. 206-441-6300

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)



CORPORATION ACKNOWLEDGEMENT

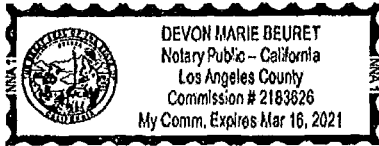
STATE OF California )

COUNTY OF Los Angeles )

On the 20th day of September, 2017 before me, the undersigned authority, a Notary Public in and for the said County and State, duly commissioned and sworn, personally appeared Kelly Curtin, known to me to be the CEO of Curtin Maritime Corporation the corporation that executed the foregoing instrument, and acknowledged the said instrument to be free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath state that she was authorized to execute said instrument and that the said affixed is the corporate seal of said corporation.

WITNESS my hand and official seal hereto affixed the day and year first above written.

DMB  
NOTARY PUBLIC in and for the  
State of Ca, residing at  
4240 E 6th St. Long Beach Ca 90814  
My Commission Expires: 03/16/2021



**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**

**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California )  
County of Los Angeles )  
On September 20<sup>th</sup>, 2017 before me, Devon Marie Beuret, Notary Public  
Date Here Insert Name and Title of the Officer  
personally appeared Kelly Curtin  
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature [Handwritten Signature]  
Signature of Notary Public

Place Notary Seal Above

**OPTIONAL**

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document Bid Bond Document Date: 8-29-2017  
Title or Type of Document: \_\_\_\_\_  
Number of Pages: 1 Signer(s) Other Than Named Above: \_\_\_\_\_

**Capacity(ies) Claimed by Signer(s)**

Signer's Name: \_\_\_\_\_  
 Corporate Officer — Title(s): \_\_\_\_\_  
 Partner —  Limited  General  
 Individual  Attorney In Fact  
 Trustee  Guardian or Conservator  
 Other: \_\_\_\_\_  
Signer Is Representing: \_\_\_\_\_

Signer's Name: Kelly Curtin  
 Corporate Officer — Title(s): CFO  
 Partner —  Limited  General  
 Individual  Attorney In Fact  
 Trustee  Guardian or Conservator  
 Other: \_\_\_\_\_  
Signer Is Representing: Curtin Maritime Corp

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

Civil Code § 1189

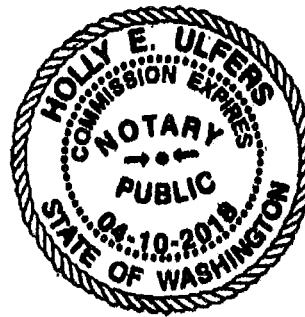
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy or validity of that document.

State of Washington
County of King

On August 29, 2017 before me, Notary Public

personally appeared Roxana Palacios
Name and or Names of Signer(s)

Who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



I certify under PENALTY OF PERJURY under the laws of the State of Wash. that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature Holly E. Ulfers
Notary Public Signature

Place Notary Public Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to the persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document Bid Bond

Document Date August 29, 2017 Number of Pages: 2

Signer's Name: Roxana Palacios

Form with checkboxes for Individual, Corporate Officer, Partner, Guardian or Conservator, Attorney-in-Fact, Trustee, Other. Includes 'RIGHT THUMBPRINT OF SIGNER' box.

Form with checkboxes for Individual, Corporate Officer, Partner, Guardian or Conservator, Attorney-in-Fact, Trustee, Other. Includes 'RIGHT THUMBPRINT OF SIGNER' box.

POWER OF ATTORNEY  
BERKLEY INSURANCE COMPANY  
WILMINGTON, DELAWARE

NOTICE: The warning found elsewhere in this Power of Attorney affects the validity thereof. Please review carefully.

KNOW ALL MEN BY THESE PRESENTS, that BERKLEY INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, having its principal office in Greenwich, CT, has made, constituted and appointed, and does by these presents make, constitute and appoint: *Steven W. Palmer; Holly E. Ulfers; Roxana Palacios; Katharine Janelle Sulder; or Kelly Christine Araujo of Kibble & Prentice Holding Company of Seattle, WA* its true and lawful Attorney-in-Fact, to sign its name as surety only as delineated below and to execute, seal, acknowledge and deliver any and all bonds and undertakings, with the exception of Financial Guaranty Insurance, providing that no single obligation shall exceed Twenty Five Million and 00/100 U.S. Dollars (U.S.\$25,000,000.00), to the same extent as if such bonds had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office in their own proper persons.

This Power of Attorney shall be construed and enforced in accordance with, and governed by, the laws of the State of Delaware, without giving effect to the principles of conflicts of laws thereof. This Power of Attorney is granted pursuant to the following resolutions which were duly and validly adopted at a meeting of the Board of Directors of the Company held on January 25, 2010:

**RESOLVED**, that, with respect to the Surety business written by Berkley Surety Group, the Chairman of the Board, Chief Executive Officer, President or any Vice President of the Company, in conjunction with the Secretary or any Assistant Secretary are hereby authorized to execute powers of attorney authorizing and qualifying the attorney-in-fact named therein to execute bonds, undertakings, recognizances, or other suretyship obligations on behalf of the Company, and to affix the corporate seal of the Company to powers of attorney executed pursuant hereto; and said officers may remove any such attorney-in-fact and revoke any power of attorney previously granted; and further

**RESOLVED**, that such power of attorney limits the acts of those named therein to the bonds, undertakings, recognizances, or other suretyship obligations specifically named therein, and they have no authority to bind the Company except in the manner and to the extent therein stated; and further

**RESOLVED**, that such power of attorney revokes all previous powers issued on behalf of the attorney-in-fact named; and further

**RESOLVED**, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligation of the Company; and such signature and seal when so used shall have the same force and effect as though manually affixed. The Company may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Company, notwithstanding the fact that they may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, the Company has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 30<sup>th</sup> day of August, 2016.

Attest:

Berkley Insurance Company

(Seal)

By Ira S. Lederman  
Ira S. Lederman  
Executive Vice President & Secretary

By Jeffrey M. Hafter  
Jeffrey M. Hafter  
Senior Vice President

WARNING: THIS POWER INVALID IF NOT PRINTED ON BLUE "BERKLEY" SECURITY PAPER.

STATE OF CONNECTICUT )  
 ) ss:  
COUNTY OF FAIRFIELD )

Sworn to before me, a Notary Public in the State of Connecticut, this 30<sup>th</sup> day of August, 2016, by Ira S. Lederman and Jeffrey M. Hafter who are sworn to me to be the Executive Vice President and Secretary, and the Senior Vice President, respectively, of Berkley Insurance Company.

MARIA C. RUNDBAKEN  
NOTARY PUBLIC  
MY COMMISSION EXPIRES  
APRIL 30, 2019

Maria C. Rundbaken  
Notary Public, State of Connecticut

CERTIFICATE

I, the undersigned, Assistant Secretary of BERKLEY INSURANCE COMPANY, DO HEREBY CERTIFY that the foregoing is a true, correct and complete copy of the original Power of Attorney; that said Power of Attorney has not been revoked or rescinded and that the authority of the Attorney-in-Fact set forth therein, who executed the bond or undertaking to which this Power of Attorney is attached, is in full force and effect as of this date.

Given under my hand and seal of the Company, this 20<sup>th</sup> day of August, 2017

(Seal)

Vincent P. Forte  
Vincent P. Forte

WARNING - Any unauthorized reproduction or alteration of this document is prohibited. This power of attorney is void unless seals are readable and the certification seal at the bottom is embossed. The background imprint, warning and verification instructions (on reverse) must be in blue ink.

**CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.
  
- The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/REMEDIAL ACTION TAKEN

Contractor Name: Curtin Maritime, Corp.

Certified By Steven Chew Title Vice President, Operations  
 Name Steven Chew Date 09/25/2017  
 Signature Digitally signed by Steven Chew  
 DN: C=US, E=steveo@curtinmaritime.com,  
 O=Curtin Maritime, OU=Contractor,  
 CN=Steven Chew  
 Date: 2017.09.25 15:38:57-07'00

**USE ADDITIONAL FORMS AS NECESSARY**

# City of San Diego

CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, Email: ASanfilippo@sandiego.gov  
Phone No. (619) 533-3439, Fax No. (619) 533-3633

## ADDENDUM C

 **e - Bidding** FOR



## MISSION BAY NAVIGATIONAL SAFETY DREDGING


BID NO.: \_\_\_\_\_ K-18-1576-DBB-3  
SAP NO. (WBS/IO/CC): \_\_\_\_\_ B-10163  
CLIENT DEPARTMENT: \_\_\_\_\_ 1714  
COUNCIL DISTRICT: \_\_\_\_\_ 2  
PROJECT TYPE: \_\_\_\_\_ GG

### BID DUE DATE:

**2:00 PM**  
**SEPTEMBER 26, 2017**  
**CITY OF SAN DIEGO**  
**PUBLIC WORKS CONTRACTS**  
**1010 SECOND AVENUE, 14<sup>th</sup> FLOOR, MS 614C**  
**SAN DIEGO, CA 92101**

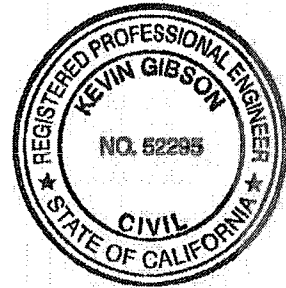
# ENGINEER OF WORK

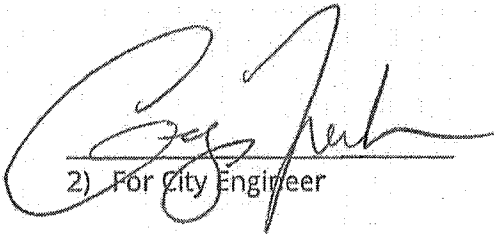
The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineers:

  
1) Registered Engineer

9/13/17  
Date

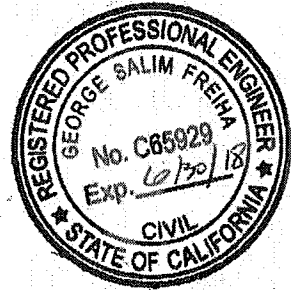
Seal:



  
2) For City Engineer

9/13/17  
Date

Seal:



**A. CHANGES TO CONTRACT DOCUMENTS**

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

**B. ADDENDA**

1. To Addendum A, Section B, BIDDER'S QUESTIONS, pages 16 and 17, Q58 and A58, and Q59 and A59, **DELETE** in their entirety and **SUBSTITUTE** with the following:

Q58. Section 1.03 Qualifications, item A. Please confirm that a Contractor would be considered qualified to conduct eelgrass collection, preparation of planting units, and transplanting if the assigned project manager for this portion of the work has a minimum of three (3) years of applicable on-the-job experience with leading at least three (3) successful large-scale (greater than one (1) acre ) eelgrass restoration plantings in California.

A58. Yes, confirmed.

Q59. Section 1.03 Qualifications, item A. Please confirm that a Contractor would be considered qualified to conduct eelgrass collection, preparation of planting units, and transplanting if two or three of the assigned staff for this portion of the work each have three or more years of applicable on-the-job experience with, and by combining their experience, have led at least three (3) successful large-scale (greater than one (1) acre) eelgrass restoration plantings in California.

A59. Yes, confirmed.

2. To Addendum A, Section E, Supplementary Special Provisions, page 21, Item 2, Sub-item 7.5, Permits, Fees, and Notices, Number 2, **DELETE** in its entirety and **SUBSTITUTE** with the following:

**7-5 PERMITS, FEES, AND NOTICES.** To the "WHITEBOOK", ADD the following:

2. The following documents are provided for Contractors use in determining limitations derived or anticipated to be derived from agency permits:



- a) California Regional Water Quality Control Board - Clean Water Act Section 401 Certification
- b) City of San Diego Site Development Permit No. 1928412
- c) Department of the Army Permit No. SPL-2017-00074-RRS. (See pages 6 through 40 of this Addendum).

**C. ATTACHMENTS**

- 1. To Attachment E, Supplementary Special Provisions, Technicals, page 50, Part 1, General, Item 1.03, Qualifications, Section A, **DELETE** in its entirety and **SUBSTITUTE** with the following:
  - A. The City recommends that all work should be done by an experienced Contractor familiar with eelgrass restoration and industry methods and standards for such work. The Contractor shall employ modern equipment and state of the art methods and techniques. The Contractor shall provide at least 1 successfully completed project of similar scope. However, it is recommended that the Contractor's assigned personnel performing the eelgrass collection, preparation of the planting units, and the transplanting have a minimum of 3 years of applicable on-the-job experience with at least three successful large-scale (greater than 1 acre) eelgrass restoration plantings in California.

**D. CERTIFICATIONS AND FORMS**

- 1. To Electronically Submitted Forms, page 348, **DELETE** in its entirety and **SUBSTITUTE** with page 5 of this Addendum.

James Nagelvoort, Director  
Public Works Department

Dated: *September 18, 2017*  
San Diego, California

JN/RWB/egz

## **ELECTRONICALLY SUBMITTED FORMS**

### **THE FOLLOWING FORMS MUST BE SUBMITTED IN PDF FORMAT WITH BID SUBMISSION**

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

- A. BID BOND - See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**
- B. CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**
- C. PERSONNEL QUALIFICATIONS (Per Section 1.03 Qualifications)**

**Bids will not be accepted until ALL the above-named forms are submitted as part of the bid submittal**



DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
CARLSBAD FIELD OFFICE  
5900 LA PLACE CT., SUITE 100  
CARLSBAD, CA 92008

September 12, 2017

SUBJECT: Validated Permit

George Freiha  
City of San Diego- Public Works Department  
525 B St., Suite 750  
San Diego, California 92101


Dear Mr. Freiha:

I have signed and enclosed your validated Department of the Army Permit (File No. SPL-2017-00074-RRS). Please retain this permit for your files.

The **Notification of Commencement of Work** statement and the **Notification of Completion of Work and Certification of Compliance** statement should be completed and returned as directed in each statement.

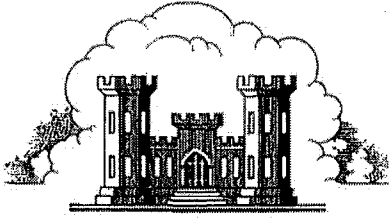
Thank you for participating in the Regulatory Program. If you have any questions, contact me at (760) 602-4831 or via e-mail at [Robert.R.Smith@usace.army.mil](mailto:Robert.R.Smith@usace.army.mil). Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey).

Sincerely,

  
Robert Revo Smith Jr.  
Senior Project Manager

Enclosures





LOS ANGELES DISTRICT  
U.S. ARMY CORPS OF ENGINEERS

**NOTIFICATION OF COMPLETION OF WORK AND  
CERTIFICATION OF COMPLIANCE WITH  
DEPARTMENT OF THE ARMY PERMIT**

Permit Number: *SPL-2017-00074-RRS*  
Name of Permittee: *George Freiha, City of San Diego- Public Works Department*  
Date of Issuance: *September 12, 2017*

Date work in waters of the U.S. completed: \_\_\_\_\_  
Construction period (in weeks): \_\_\_\_\_  
Name & phone of contractor (if any): \_\_\_\_\_

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of said permit.

\_\_\_\_\_  
Signature of Permittee Date

Upon completion of the activity authorized by this permit, sign this certification and return it using any ONE of the following two (2) methods:

(1) E-MAIL a statement including all the above information to:  
[Robert.R.Smith@usace.army.mil](mailto:Robert.R.Smith@usace.army.mil)

OR

(2) MAIL to the following address:  
U.S. Army Corps of Engineers  
Regulatory Division  
ATTN: CESPL-RGS-SPL-2017-00074-RRS  
Carlsbad Field Office  
5900 La Place Ct., Suite 100  
Carlsbad, CA 92008



DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
CARLSBAD FIELD OFFICE  
5900 LA PLACE CT., SUITE 100  
CARLSBAD, CA 92008

September 7, 2017

George Freiha  
City of San Diego- Public Works Department  
525 B St., Suite 750  
San Diego, California 92101

**DEPARTMENT OF THE ARMY PROFFERED PROVISIONAL PERMIT**

Dear Mr. Freiha:

I am responding to your application dated January 26, 2017, for a Department of the Army (DA) Permit to discharge dredged and/or fill material into waters of the United States (U.S.) and/or place structures in or conduct work in, over, under or affecting navigable waters of the U.S., in association with the Mission Bay Navigational Safety Dredging Project. The proposed work would take place in Mission Bay within the city of San Diego, in San Diego County, California.

Enclosed is a "Provisional Permit." This provisional permit is NOT VALID and does not constitute authorization for you to do work. The provisional permit describes the work that will be authorized, including general and special conditions which will be placed on your final DA permit, should you receive Coastal Zone Management (CZM) consistency concurrence from the California Coastal Commission (CCC). No work is to be performed until you have received a final DA permit.

By Federal law, no DA permit can be issued until the state has concurred with a permit applicant's CZM consistency certification. This requirement can be satisfied by obtaining CZM consistency concurrence, or providing evidence that six months have passed since you applied to the CCC for concurrence. Be aware that any conditions placed on your CZM consistency concurrence will become conditions on your DA permit, unless the U.S. Army Corps of Engineers (Corps) deems these conditions to be either unreasonable or unenforceable.

**WHEN YOU RECEIVE CZM CONSISTENCY CONCURRENCE, THE FOLLOWING STEPS NEED TO BE COMPLETED:**

- 1. The owner or authorized responsible official must sign and date both copies of the provisional permit indicating that he/she agrees to comply with all conditions stated in the permit.**
- 2. The signer's name and title (if any) must be typed or printed below the signature.**

3. Both signed copies of the provisional permit must be returned to the Corps at the above address (Attention: CESPL-RGS).

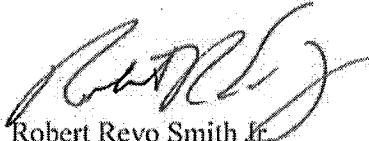
4. The CZM concurrence must be sent to the Corps with the signed copies of the provisional permit.

Should the CZM concurrence contain conditions which might result in a modification to the provisional permit, by signing and dating both copies of the provisional permit and returning them to the Corps (along with the CZM concurrence), I will assume you agree to comply with all CZM concurrence conditions which are added to the final permit.

Should the CCC not concur with your consistency certification, then the DA permit is considered denied without prejudice. If you subsequently obtain CZM concurrence, you should contact me to determine how to proceed with your permit application.

Thank you for participating in the Regulatory Program. If you have any questions, please contact me at (760) 602-4831 or via e-mail at [Robert.R.Smith@usace.army.mil](mailto:Robert.R.Smith@usace.army.mil). Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at [http://corpsmapu.usace.army.mil/cm\\_apex/l?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/l?p=regulatory_survey).

Sincerely,



Robert Revo Smith Jr.  
Senior Project Manager

Enclosures

## DEPARTMENT OF THE ARMY PERMIT

**Permittee:** City of San Diego - Public Works Department; George Freiha  
**Project Name:** Mission Bay Navigational Safety Dredging Project (Project)  
**Permit Number:** SPL-2017-00074-RRS  
**Issuing Office:** Los Angeles District Regulatory Division

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** The project, per the attached drawings, includes the dredging of up to 220,850 cubic yards (cy) of sediment from Mission Bay that would be dredged to a depth of -8.1 ft. MLLW with up to 2 ft. of allowable overdepth at up to 15 different dredge areas over 63.6 acres of navigable waters of the United States (U.S.). The project also proposes to transport the above dredged material within Mission Bay and reuse or fill up to 220,850 cy of dredged material at eleven beach and in-bay reuse sites over 19.47 acres of navigable waters of the U.S. as shown in Table 2 Reuse Area Summary in the Mission Bay Navigational Safety Dredging Biological Technical Report dated December 2016 (BTR) as prepared by Merkel. Table 1 in the Mission Bay Navigational Safety Dredging Biological Technical Report as prepared by Merkel and Associates (Merkel), dated December 2016, summarizes the dredging by individual dredge areas and includes the area, volume of cut, design elevation of the final dredged area, and total eelgrass (*Zostera marina*) impacts of 42.93 acres. A turbidity curtain may be used as outlined in the final Mitigated Negative Declaration (MND) authorized by the City.

Dredge sites as shown in the attached drawings include the west and east basins of Mission Bay and northwest of the Corps Federal Mission Bay Inlet Channel Project in the West Mission Bay channel and south of the Corps Rose Creek channel project. Other project areas include Sail Bay, Fiesta Bay, Crown Point, Leisure Beach, areas south of the Corps Federal project at Rose Creek and north of the Corps Mission Bay Inlet channel project, in-bay reuse areas, and an upland and in-bay staging area on disturbed lands at South Shores and within South Pacific Passage east of Sea World. Also the Corps will be requiring eelgrass mitigation per the California Eelgrass Mitigation Plan (CEMP) of 52 acres of eelgrass establishment for the temporal loss and risk. The project eelgrass mitigation requires a minimum planting of 60 acres of eelgrass per the Eelgrass Mitigation Plan furnished by Merkel to achieve the 52 acres of eelgrass mitigation. Final eelgrass impacts, planting, and mitigation needs will be determined by pre- and post-



dredging surveys conducted in accordance with the CEMP and have to be in compliance with the special conditions of this permit as determined by the Corps after consulting with NMFS.

Also in association with the above Project Description and as shown in the attached figures, tables, and drawings, and as implemented by the special conditions of this permit you are authorized to:

**1. DREDGING LOCATION(S):**

Dredging operations authorized in this permit shall be limited to the Mission Bay areas defined in the attached Plans for the Construction of Mission Bay Navigational Safety Dredging prepared by the permittee and Rick Engineering (sheets 1-13). No more than 220,850 cubic yards of dredged material are authorized for dredging from Mission Bay. No dredging or dredging operations are authorized in any other location under this permit.

**2. DREDGING DEPTH:**

For this permit, the maximum dredging design depth (also known as the project depth or grade) shall be - 8.1 ft. MLLW with up to 2 ft. of allowable overdepth at up to 15 different dredge areas over 63.6 acres of navigable waters of the United States (U.S.) as shown in the attached Table 1 and below the mean lower low water (MLLW) datum with a maximum allowable overdredge depth of 2 ft. No dredging shall occur deeper than -10.1 feet below MLLW.

**3. BEACH NOURISHMENT AND IN-BAY LOCATION(S):**

Beach nourishment placement authorized in this permit shall be limited to the areas shown in Table 2 areas and defined in the attached Plans for the Construction of Mission Bay Navigational Safety Dredging prepared by the permittee and Rick Engineering (sheets 1-13). No more than 220,850 cubic yards of sand material are authorized for beach nourishment from the beneficial reuse areas shown at the eight disposal sites shown in Table 2. No beach nourishment is authorized in any other location under this permit.

**4. OTHER IN-BAY DISPOSAL SITES:**

Note that the above beach nourishment sites in Item 3 include four in-bay disposal sites at Reuse Sites 3, 4, 6, and 7 in Sail Bay as shown in the attached permit drawings.

**Project Location:** The project location is situated at multiple locations, per the attached drawings and Table 1 and Table 2, within the waters and public beaches of Mission Bay and Mission Bay Park, in the City of San Diego, San Diego County, CA. Dredge sites include the west and east basins of Mission Bay and northwest of the Corps Federal Project in the West Mission Bay channel and south of the Corps Rose Creek channel project. Other project areas include Sail Bay, Fiesta Bay, Crown Point, Leisure Beach, areas south of the Corps Federal project at Rose Creek and north of the Corps Mission Bay Inlet channel project, and in-bay reuse areas. The work area includes maintenance dredging and reuse of dredged sediments within approximately 76 acres of bay waters and sand beach, and temporary contractor staging within approximately 2.5 acres of bay waters. Please see attached site location map Sheet G-2 (39721-02-D) and Table 1 and 2 for exact locations for each dredging and reuse disposal site.

## PERMIT CONDITIONS

### General Conditions

1. The time limit for completing the authorized activity ends on September 9, 2022. If you find that you require more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. A conditioned water quality certification or waiver thereof has been issued for your project, you must comply with the conditions specified in the water quality certification once obtained as special conditions to this permit unless the Corps has issued a waiver determination.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

### Special Conditions:

1. Prior to initiating construction in waters of the U.S., the Permittee shall submit to the Corps Regulatory Division a complete set of final detailed grading/construction plans showing all work and structures in waters of the U.S. All plans shall be in compliance with the Final Map and Drawing Standards for the South Pacific Division Regulatory Program dated February 10, 2016 (<http://www.spd.usace.army.mil/Missions/Regulatory/PublicNoticesandReferences/tabid/10390/Article/651327/updated-map-and-drawing-standards.aspx>). All plan sheets shall be signed, dated, and submitted on paper no larger than 11x 17 inches. No work in waters of the U.S. is authorized until the Permittee receives, in writing (by letter or e-mail), Corps Regulatory Division approval of the final detailed grading/construction plans. The Permittee shall ensure that the project is built in accordance with the Corps-approved plans.

Within 45 calendar days of completion of authorized work in waters of the U.S., the Permittee shall submit to the Corps Regulatory Division a post-project implementation memorandum including the following information:

- A) Date(s) work within waters of the U.S. was initiated and completed;
- B) Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
- C) Color photographs (including map of photopoints) taken at the project site before and after construction for those aspects directly associated with permanent impacts to waters of the U.S. such that the extent of authorized fills can be verified;
- D) One copy of "as built" drawings for the entire project. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
- E) Signed Certification of Compliance (attached as part of this permit package).

Dredging Conditions:

## 2. SEDIMENT TESTING FOR PHASED PROJECTS

The Permittee is prohibited from conducting dredging operations and disposing material in navigable waters of the United States that has not been tested and determined by the Corps Regulatory Division, in consultation with the U.S. Environmental Protection Agency (EPA), to be suitable for disposal in ocean waters. Sampling and testing of previously tested sediment or previously dredged areas is required after three years from the date of initial sediment sampling and testing unless the Corps deems that conditions warrant another testing duration be formulated with EPA consultation. This time limit is subject to change at the discretion of the Corps Regulatory Division if any event causes previously determined suitable material to become potentially unsuitable. The applicant must demonstrate the proposed dredged materials are chemically and physically suitable for disposal in ocean waters according to the provisions of the Inland Testing Manual (ITM) and the Corps Regional Guidance Letter (RGL) 06-02, as appropriate. If the material does not meet the physical and chemical criteria for unconfined disposal in ocean waters, the dredged material shall be disposed at a Corps approved upland disposal location. The applicant shall submit to the Corps Regulatory Division and EPA a draft Sampling and Analysis Plan (SAP). Sampling may not commence until the final SAP is approved, in writing, by the Corps Regulatory Division, in consultation with EPA. Further the SAP Results (SAPR) must also be reviewed and approved and the Permittee must receive a written authorization to proceed. The SAP R (Revised Mission Bay Maintenance Dredging Program Dredged Material Characterization Study, Merkel & Associates, dated April 2017) has been received and approved by the Corps and EPA for the work to be performed in 2017.

## 3. OPERATIONS PLAN

At least 7 calendar days before initiation of any dredging on in-bay disposal operations authorized by this permit, the Permittee shall submit a dredging and disposal Operations Plan to the Corps Regulatory Division and EPA, with the following information:

A) A list of the names, addresses and telephone numbers of the Permittee's project manager, the contractor's project manager, the dredging operations inspector, the disposal operations inspector and the captain of each tug boat, or other form of vehicle used to transport dredged material to the designated disposal site.

B) A list of all vessels, dredging equipment and electronic positioning systems or navigation equipment to be used for dredging and disposal operations, including: the capacity, load level and acceptable operating sea conditions for each dredge or disposal barge or scow.

C) A schedule describing when the dredging project is planned to begin and end.

D) A pre-construction dredging bathymetric survey (presented as a large format plan view drawing), taken within thirty (30) days before the dredging and/or in-bay disposal begins, accurate to 0.5-foot with the exact location of all soundings clearly defined on the survey chart. The pre-dredge survey chart shall be prepared showing the following information:

i) The entire dredging and in-bay disposal area, including the toe and top of all side-slopes, and typical cross sections of the dredging areas. To ensure that the entire area is surveyed, the pre-dredge condition survey should cover an area at least 50 feet outside the top of the side-slope or the boundary of the dredging area.

ii) Areas shallower than the dredging design depth shall be shaded green, areas between the dredging design depth and overdredge depth shall be shaded yellow, and areas below overdredge depth that will not be dredged shall be shaded blue.

iii) The pre-dredging survey chart shall be signed by the Permittee to certify that the data are accurate and that the survey was completed within thirty (30) days before the proposed dredging start date.

E) A debris management plan to prevent unauthorized disposal of large debris or other unsuitable materials. The debris management plan shall include: sources and expected types of debris if known, debris separation and retrieval methods and equipment to be used, debris disposal location(s), and debris disposal methods (e.g., recycling, landfill, hazardous/toxic/radioactive materials/munitions disposal sites, etc.).

F) Beach Nourishment:

i) A schedule describing when the beach nourishment project would begin and end.

ii) A debris management plan to prevent disposal of debris at beach nourishment location(s). The debris management plan shall include: sources and expected types of debris, debris separation and retrieval methods, and debris disposal methods.

iii) The Permittee shall delineate the perimeter of the beach nourishment area during beach nourishment operations, and monitor the area to protect the public from construction hazards and equipment.

#### NOTICE TO PROCEED

The Permittee shall not commence dredging or disposal operations unless and until the Permittee receives a Notice to Proceed, in writing (letter or email), from the Corps Regulatory Division.

#### 4. MAINTAIN PRINTED COPY OF PERMIT ON-BOARD

The Permittee and its contractors and subcontractors shall maintain a copy of this permit at the work site, and on all vessels used to dredge, transport and dispose of dredged material authorized under this permit.

#### 5. CAPTAIN LICENSING

The Permittee shall ensure that the captain of any dredge, tug or other vessel used in the dredging and disposal operations, is a licensed operator under U.S. Coast Guard regulations and follows the Inland and Ocean Rules of Navigation or the U.S. Coast Guard Vessel Traffic Control Service. All such vessels, dredges or disposal barges or scows, shall have the proper day shapes (mast head signals which indicate vessel operational status), operating marine band radio, and other appropriate navigational aids.

#### 6. RADIO CHANNEL MONITORING

The Permittee's contractor(s) and the captain of any vessel covered by this permit shall monitor VHF-FM channels 13 and 16 while conducting dredging operations.

#### 7. INSPECTIONS

Upon request, the Permittee and its contractor(s) shall allow inspectors from the Corps Regulatory Division (may include other Corps Divisions), EPA, and (or) the U.S. Coast Guard to inspect all phases of the dredging and disposal operations. Upon request, the Permittee and its contractor(s) retained to perform work authorized by the permit or to monitor compliance with this permit shall make available to inspectors from the Corps EPA, and (or) the U.S. Coast Guard the following: dredging and disposal operations inspectors' logs, the vessel track plots and all disposal vessel logs or records, any analyses of the characteristics of dredged material, or any other documents related to dredging and disposal operations.

#### 8. INTERFERENCE WITH NAVIGATION

During disposal and dredging operations the permitted activity shall not interfere with the public's right to free navigation on all navigable waters of the United States.

#### 9. NON-COMPLIANCE NOTIFICATION

If non-compliance of the permit occurs, the Permittee shall report the details of the permit non-compliance to the Corps Regulatory Division within twenty-four (24) hours. If the Permittee retains any contractors to perform any activity authorized by this permit, the Permittee shall instruct all such contractors that any permit non-compliance of any permit condition must be reported to the Permittee immediately who must then report to the Corps Regulatory Division.

#### 10. HOPPER DREDGE OPERATION

No hopper dredging is authorized under this permit.

#### 11. BARGE OR SCOW OPERATIONS

When using a disposal barge or scow, no water shall be allowed to flow over the sides throughout the dredging and disposal operations. The fill level of the disposal barge or scow shall not exceed the load line to prevent any dredged material or water from spilling over the sides during all

operations. No disposal barge or scow shall be filled above this predetermined level or load line (vessel frame/plating). Before each disposal barge or scow is transported to the disposal site, the Permittees dredging site inspector shall certify that it is filled correctly.

## 12. ELECTRONIC POSITIONING SYSTEM NAVIGATION

The Permittee shall use an electronic positioning system to navigate throughout all dredging, hauling, disposal, and discharge operations. The electronic positioning system shall have a minimum horizontal accuracy and precision of +/- 10 feet (or 3 meters). If the electronic positioning system fails or navigation problems are detected, all dredging operations shall cease until the failure or navigation problems are corrected.

## 13. POST-CONSTRUCTION REPORTING

The Permittee shall submit a post-construction/project completion report to the Corps Regulatory Division within 30 calendar days after completion of each dredging and in-bay disposal and beach nourishment event to document compliance with all general and special conditions in this permit. The report shall include all information collected by the Permittee, the dredging operations inspector and the disposal operations inspector or the disposal vessel captain. One post-construction report (instead of separate reports) should be submitted for all activities conducted under the permit. The report must describe whether or not all general and special conditions were met. The report shall include:

- A) Project Name and Corps file number (eg, SPL-1980-12345-wtf).
- B) Start date (month/day/year) and completion date of dredging and disposal operations.
- C) The disposition and total cubic yards of all material disposed or discharged at each site or location.
- D) Dredging method (e.g., suction dredge, clamshell, excavator, dragline, etc.).
- E) Mode of transportation.
- F) Frequency of disposal and plots of all trips to the disposal or discharge site(s).
- G) Tug boat or other disposal vessel logs documenting contact with the U.S. Coast Guard before each trip to the disposal or discharge site(s).
- H) A detailed post-dredging bathymetry survey drawing of the dredging area. The survey drawing shall show areas above the dredging design depth shaded green, areas between the dredging design depth and overdredge depth shaded yellow, areas below overdredge depth that were not dredged or areas that were deeper than the overdredge depth before the project began as indicated on the pre-dredging survey shaded blue, and areas dredged below the overdredge depth or outside the project boundaries shaded red. The methods used to record the post-construction dredging survey drawing shall be the same methods used in the pre-construction dredging survey drawing. The survey drawing shall be signed by the Permittee certifying that the data are accurate.
- I) A description of any navigation problems and corrective measures implemented.
- J) Copies of all completed Scow Certification Checklists for any disposal activities.

Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA) Avoidance Measures, and Essential Fish Habitat under the Magnuson Stevens Act (EFH):

14. This Corps permit does not authorize you to take any threatened or endangered species, in particular the federally-listed as endangered California least tern (*Sterna antillarum brownii*; CLT).

In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The approved U.S Fish and Wildlife Service (USFWS) Section 7 informal consultation letters dated July 13, 2017 and August 1, 2017 (FWS-SDG-17B0140-17F1120) relating to the extension of the City's Multiple Species Conservation Program (MSCP) Sub Area Plan and Incidental Take Permit (issued to the City on July 18, 1997 by the USFWS) to the Corps shall be implemented by the permittee. The USFWS informal consultation letters for ESA compliance contains mandatory terms and conditions to implement the measures that are associated with "incidental take" that is also specified in the above letters. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached letters, the terms and conditions of which are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the above informal resolution of the ESA, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.

15. This Corps permit does not authorize you to take the federally-listed endangered Green Sea Turtle (*Chelonia Mydas*: GST). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The approved ESA Section 7 BO and letter from the National Marine Fisheries Service (NMFS) dated 23 August 2017 relating to the Corps shall be implemented by the permittee. In addition to the NMFS formal consultation letter for ESA compliance contains mandatory terms and conditions to implement the measures that are associated with "incidental take" that is also specified in the above letter. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the letter, the terms and conditions of which are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the above informal resolution of the ESA, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The NMFS ESA letter dated 23 August 2017 also contains authority to implement the City of San Diego Mission Bay Navigational Safety Dredging Project Green Sea Turtle Biological Assessment and Marine Mammal Impact Avoidance and Contingency Plan (Plan) as prepared by Merkel and Associates (Merkel) and dated June 2017 and revised August 18, 2017 for compliance with ESA, EFH, and MMPA regulations. Also please note that the City's project biologist (Monitor) in the above Plan shall be required to monitor all dredging and disposal operations to ensure that the permittee and the contractor and subcontractor's activities comply with the Corps permit and submit immediate reports to the Corps and NMFS if there is an incident involving injury or death of a green sea turtle or marine mammal. The Monitor shall also provide the Corps with weekly email monitoring reports during the project duration submitted on every Monday (Close of Business) of the project duration for the prior week of work.

Section 10 (Work and Structures in Navigable Waters of the United States):

16. INTERFERENCE WITH NAVIGATION: The permitted activity shall not interfere with the right of the public to free navigation on all navigable waters of the United States as defined by 33 C.F.R. Part 329. No ocean or nearshore ocean disposal is authorized by this permit.

17. PILES:

Creosote treated pilings shall not be placed in navigable waters unless all of the following conditions are met:

- A) The project involves the repair of existing structures that were originally constructed using wood products;
- B) The creosote treated pilings are wrapped in plastic;
- C) Measures are taken to prevent damage to plastic wrapping from boat use. Such measures may include installation of rub strips or bumpers;
- D) The plastic wrapping is sealed at all joints to prevent leakage; and
- E) The plastic material is expected to maintain its integrity for at least ten years, and plastic wrappings that develop holes or leaks must be repaired or replaced in a timely manner by the Permittee.

18. LIMITATIONS: No other modifications or work shall occur to the structure permitted herein.

19. CLEAN CONSTRUCTION PRACTICES: The Permittee shall discharge only clean construction materials suitable for use in the oceanic environment. The Permittee shall ensure no debris, soil, silt, sand, sawdust, rubbish, cement or concrete washings thereof, oil or petroleum products, hazardous/toxic/radioactive/munitions from construction or dredging or disposal shall be allowed to enter into or placed where it may be washed by rainfall or runoff into waters of the United States. Upon completion of the project authorized herein, any and all excess material or debris shall be completely removed from the work area and disposed of in an appropriate upland site.

20. U.S. COAST GUARD NOTIFICATION: To ensure navigational safety, the Permittee shall provide appropriate notifications to the U.S. Coast Guard as described below:

For projects in San Diego County:  
U.S. Coast Guard  
Sector San Diego, Attn: Briana Biagas  
2710 N. Harbor Dr.  
San Diego, CA 92101  
Attn: Ports and Waterways Division  
Tel : (619) 278-7262  
FAX: (619) 278-7279

A) The Permittee shall notify the U.S. Coast Guard, Commander, 11th Coast Guard District (dpw) and the U.S. Coast Guard, Sector San Diego (COTP) (contact information shown above), not less than 14 calendar days prior to commencing work and as project information changes. The



notification shall be provided by e-mail with at least the following information, transmitted as an attached Word or PDF file:

- 1) Project description including the type of operation (i.e. dredging, diving, construction, etc).
- 2) Location of operation, including Latitude / Longitude (NAD 83).
- 3) Work start and completion dates and the expected duration of operations. The U.S. Coast Guard needs to be notified if these dates change.
- 4) Vessels involved in the operation (name, size and type).
- 5) VHF-FM radio frequencies monitored by vessels on scene.
- 6) Point of contact and 24 -hour phone number.
- 7) Potential hazards to navigation.
- 8) Chart number for the area of operation.
- 9) Recommend the following language be used in the Local Notice to Mariners: "Mariners are urged to transit at their slowest safe speed to minimize wake, and proceed with caution after passing arrangements have been made."

B) The Permittee and its contractor(s) shall not remove, relocate, obstruct, willfully damage, make fast to, or interfere with any aids to navigation defined at 33 C.F.R. chapter I, subchapter C, part 66. Not less than 30 calendar days in advance of operating any equipment adjacent to any aids to navigation that require relocation or removal, the Permittee shall notify, in writing, the Eleventh U.S. Coast Guard District and the Corps Regulatory Division. The Permittee and its contractor(s) are prohibited from relocating or removing any aids to navigation until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard.

C) Except for temporary safety markers placed in areas of active dredging and eelgrass restoration work as coordinated with the San Diego Lifeguard Services, responsible for safety on the waters of Mission Bay, the Permittee is prohibited from establishing private aids to navigation in navigable waters of the United States until authorized to do so by the Corps Regulatory Division and the U.S. Coast Guard. Should the Permittee determine the work requires the temporary placement and use of private aids to navigation in navigable waters of the United States, the Permittee shall submit a request in writing to the Corps Regulatory Division and the U.S. Coast Guard.

D) The COTP may modify the deployment of marine construction equipment or mooring systems to safeguard navigation during project construction. The Permittee shall direct questions concerning lighting, equipment placement, and mooring to the appropriate COTP and San Diego Lifeguard Services.

21. OBSTRUCTIONS: The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers Regulatory Division, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

22. COMMENCEMENT NOTIFICATION: The Permittee shall notify the Corps Regulatory Division of the date of commencement of work in navigable waters of the United States no less than 14 calendar days prior to commencing work, and shall notify the Corps of the date of completion of operations at least five (5) calendar days prior to such completion.

23. POST-CONSTRUCTION AS-BUILT SURVEY(S):

Within 30 calendar days of completion of the project authorized by this permit, the Permittee shall conduct a post-project survey indicating the location of all new structures and their features, or the modification of structures and their features within navigable waters. The Permittee shall forward a copy of the survey, as well as a copy of this permit, to the Corps Regulatory Division (via e-mail at: [Regulatory.SPL@usace.army.mil](mailto:Regulatory.SPL@usace.army.mil)) and to the National Oceanic and Atmospheric Administration for updating nautical charts (via email at: [Lori.Powdrell@noaa.gov](mailto:Lori.Powdrell@noaa.gov)). Post-project surveys/as-built plans should be provided electronically in two formats: .pts (xyz) and one of, .pdf, CAD, or GIS. Include the following header metadata: project name, surveyor's name and company, area surveyed (acres), type of survey method, date of survey, geographic control points (for example: latitude/longitude, plane coordinates), geographic coordinate system (use NAD83), geographic projection, units (use US Survey Feet), and tide gage location. For all subsurface structures and dredge projects include elevation (z coordinate) datum indicated as a negative below MLLW, and also indicate the survey system and bin sizes as appropriate.

24. CAULERPA PRE-CONSTRUCTION SURVEY: A pre-construction survey of the project area for *Caulerpa taxifolia* (*Caulerpa*) shall be conducted in accordance with the *Caulerpa* Control Protocol (see <http://swr.nmfs.noaa.gov/hcd/caulerpa/ccp.pdf>) not earlier than 90 calendar days prior to planned construction and not later than 30 calendar days prior to construction. The results of this survey shall be furnished to the Corps Regulatory Division, NOAA Fisheries, and the California Department of Fish and Wildlife (CDFW) at least 15 calendar days prior to initiation of work in navigable waters. In the event that *Caulerpa* is detected within the project area, the Permittee shall not commence work until such time as the infestation has been isolated, treated, and the risk of spread is eliminated as confirmed in writing by the Corps Regulatory Division, in consultation with NOAA Fisheries and CDFW.

25. EELGRASS PRE-CONSTRUCTION SURVEY:

Prior to construction, a pre-project eelgrass survey should be conducted in accordance with the California Eelgrass Mitigation Policy (CEMP) ([http://www.westcoast.fisheries.noaa.gov/publications/habitat/california\\_eelgrass\\_mitigation/Final\\_CEMP\\_October\\_2014/cemp\\_oct\\_2014\\_final.pdf](http://www.westcoast.fisheries.noaa.gov/publications/habitat/california_eelgrass_mitigation/Final_CEMP_October_2014/cemp_oct_2014_final.pdf)) no earlier than 60 calendar days prior to planned construction. The results of the survey must be submitted to the Corps at least 15 calendar days prior to initiation of work in waters of the United States. If the pre-project survey demonstrates eelgrass presence within the project vicinity, post-project survey(s) must be conducted and any impacts to eelgrass mitigated in accordance with the CEMP. Permittee shall also implement the Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project Mission Bay, San Diego, CA as prepared by Merkel and dated October 2016, and revised December 2016.

## 26. EELGRASS POST-CONSTRUCTION SURVEY(S):

Once authorized impacts to navigable waters authorized by this permit have ceased, the Permittee shall conduct two years of post-construction eelgrass monitoring surveys per the mapping guidelines in NOAA Fisheries' California Eelgrass Mitigation Policy (Policy) ([http://www.westcoast.fisheries.noaa.gov/publications/habitat/california\\_eelgrass\\_mitigation/Final\\_CEMP\\_October\\_2014/cemp\\_oct\\_2014\\_final.pdf](http://www.westcoast.fisheries.noaa.gov/publications/habitat/california_eelgrass_mitigation/Final_CEMP_October_2014/cemp_oct_2014_final.pdf)). All required post-construction monitoring surveys shall be submitted by the Permittee to the Corps and NOAA Fisheries within 30 calendar days of each survey completion date. Based upon the post-construction monitoring survey results and in accordance with the Policy, the Corps will determine the need and/or amount of EFH mitigation required to offset adverse impacts to such habitat. The Corps will transmit its determination to the Permittee in writing. Within 60 calendar days of receiving the Corps' determination specifying the need and amount of mitigation, the Permittee shall submit a draft new EFH mitigation plan to the Corps for review and approval. The new EFH mitigation plan shall be prepared in accordance with the Policy and the Corps' South Pacific Division Regional Compensatory Mitigation Guidelines and Monitoring Requirements, dated January 12, 2015. The Permittee shall fully implement the new final EFH mitigation plan as approved by the Corps.

### Cultural Resources:

27. Pursuant to 36 C.F.R. section 800.13, in the event of any discoveries during construction of either human remains, archeological deposits, or any other type of historic property, the Permittee shall notify the Corps' Archeology Staff within 24 hours (Danielle Storey at 213-452-3855 OR Meg McDonald at 213-452-3849 or Robert Smith at (760) 602-4831). The Permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The Permittee shall not resume construction in the area surrounding the potential cultural resources until the Corps Regulatory Division re-authorizes project construction, per 36 C.F.R. section 800.13.

28. No later than one month following completion of authorized work in waters of the U.S., the permittee shall ensure all sites within waters of the U.S. subject to authorized, temporary impacts are restored to pre-project alignments, elevation contours, and conditions to the maximum extent practicable to ensure expeditious resumption of aquatic resource functions. No later than 45 calendar days following completion of authorized work in waters of the U.S., the permittee shall submit a memorandum documenting compliance with this special condition.

29. Incidents where any individuals of fish, whale, marine mammal, sea turtle, or marine plant species as appropriate for your district listed by NOAA Fisheries under the Endangered Species Act appear to be injured or killed as a result of discharges of dredged or fill material into waters of the United States or structures or work in navigable waters of the United States authorized by this NWP shall be reported to NOAA Fisheries, Office of Protected Resources at (301) 713-1401 and the Carlsbad Regulatory Office of the Los Angeles District of the U.S. Army Corps of Engineers at (760) 602-4831. The finder should leave the plant or animal alone, make note of any circumstances likely causing the death or injury, note the location and number of individuals involved and, if possible, take photographs. Adult animals should not be disturbed unless circumstances arise where they are obviously injured or killed by discharge exposure, or some unnatural cause. The finder may

be asked to carry out instructions provided by NOAA Fisheries, Office of Protected Resources, to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved. Also reference is made to special condition 15 relative to NMFS authorization for ESA, EFH, and MMPA avoidance as it supplements this special condition.

30. This permit is contingent upon the issuance of a Coastal Zone Management Act (CZMA) consistency certification from the California Coastal Commission or waiver thereof. The Permittee shall abide by the terms and conditions of the CZMA consistency certification. The Permittee shall submit the CZMA consistency certification to the Corps Regulatory Division (preferably via email) within two weeks of receipt from the issuing state agency. The Permittee shall not proceed with construction until receiving an e-mail or other written notification from Corps Regulatory Division acknowledging the CZMA consistency certification, reviewed, and determined to be acceptable. If the California Coastal Commission fails to act on a request for concurrence with your certification within six months after receipt, please notify the Corps so we may consider whether to presume a concurrence pursuant to 33 CFR 325.2(b)(2)(ii).

31. The permittee shall implement and abide by the Section 401 Water Quality Certification (WQC) from the San Diego Regional Water Quality Control Board (RWQCB) issued, 2017 (R9-2017-0036:832167:amonji) which expires August 23, 2022.

**Further Information:**

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

(x) Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).

(x) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

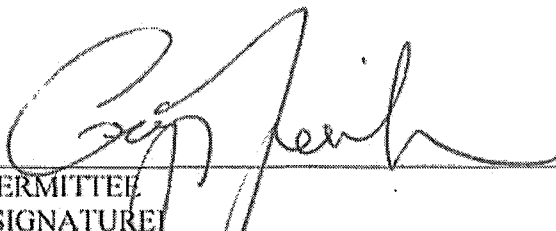
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. **Reliance on Applicant's Data.** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
- a. You fail to comply with the terms and conditions of this permit.
  - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
  - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

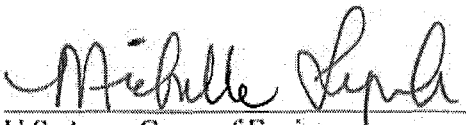
6. **Extensions.** General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

 9-8-2017  
PERMITTEE [SIGNATURE] DATE [month, day, year]

George S. FREIHA, Senior Project Manager  
PERMITTEE [PRINT NAME and AFFILIATION]

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

 9/11/17  
U.S. Army Corps of Engineers [SIGNATURE] DATE

MICHELLE LYNCH, CHIEF, SOUTH COAST BRANCH  
U.S. Army Corps of Engineers [PRINT NAME and TITLE]

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
TRANSFEEEE [PRINT NAME and SIGN] DATE

Table I. Dredge Area Summary.

LOCATION	AREA (ACRES)	DREDGE ELEV. (FT NGVD29/MLLW)	CUT VOL (CY)	FILL VOLUME (CY)	1-FT OVERDREDGE (CY)	2-FT OVERDREDGE (CY)	EELGRASS IMPACT (ACRES)
<b>DREDGE AREA</b>							
DREDGE 1A	15.87	-10.5' NGVD /-8.1' MLLW	22,690	-	25,600	-	15.87
DREDGE 1B	0.52	-10.5' NGVD /-8.1' MLLW	590	-	840	-	0.52
DREDGE 1C	0.63	-10.5' NGVD /-8.1' MLLW	720	-	1,020	-	0.63
DREDGE 1D	0.41	-10.5' NGVD /-8.1' MLLW	500	-	660	-	0.41
DREDGE 2	0.41	-10.5' NGVD /-8.1' MLLW	470	-	660	-	0.41
DREDGE 3	2.84	-10.5' NGVD /-8.1' MLLW	5,450	-	4,580	-	2.57
DREDGE 4	0.8	-10.5' NGVD /-8.1' MLLW	610	-	1,290	-	0.64
DREDGE 5A	13.5	-10.5' NGVD /-8.1' MLLW	19,850	-	21,780	-	13.30
DREDGE 5B	NO WORK	NO WORK	NO WORK	-	NO WORK	NO WORK	NO WORK
DREDGE 6	0.67	-10.5' NGVD /-8.1' MLLW	850	-	1,080	-	0.42
DREDGE 7	1.3	-10.5' NGVD /-8.1' MLLW	3,380	-	2,100	-	1.30
DREDGE 8	NO WORK	NO WORK	NO WORK	-	NO WORK	NO WORK	NO WORK
DREDGE 9	1.94	-10	4,770	-	-	-	0.97
DREDGE 10	3.61	-10.5' NGVD /-8.1' MLLW	15,300	8,780	-	-	2.01
DREDGE 11	1.67	-7.0' NGVD /-4.6' MLLW	5,900	5,900	-	-	0.64
DREDGE 12A	11.44	-10.5' NGVD /-8.1' MLLW	22,890	-	-	36,930	0.99
DREDGE 12B	0.13	-10.5' NGVD /-8.1' MLLW	230	-	-	410	0.00
DREDGE 12C	0.11	-10.5' NGVD /-8.1' MLLW	190	-	-	350	0.06
DREDGE 12D	0.07	-10.5' NGVD /-8.1' MLLW	120	-	-	210	0.04
DREDGE 12 E	0.21	-10.5' NGVD /-8.1' MLLW	380	-	-	680	0.04
DREDGE 12F	0.08	-10.5' NGVD /-8.1' MLLW	140	-	-	260	0.00
DREDGE 13 & 14	3.78	-5.0' NGVD /-2.6' MLLW	8,320	8,320	-	-	0.78
DREDGE 15	3.37	-7.0' NGVD /-4.6' MLLW	9,050	9,050	-	-	1.31
<b>TOTAL DREDGE</b>	<b>63.36</b>		<b>122,400</b>	<b>32,050</b>	<b>59,610</b>	<b>38,840</b>	<b>42.93</b>

**Table 2. Reuse Area Summary.**

BENEFICIAL RESUE EELGRASS MITIGATION SITE MITIGATION SITE	AREA (ACRES)	FILL ELEV. (FT NGVD29/MLLW)	FILL VOL (CY)
<b>RESUSE SITES</b>			
RESUSE WEST 3 **	2.51	-10.5' NGVD /-8.1' MLLW	41,270
RESUSE WEST 4 **	2.69	-10.5' NGVD /-8.1' MLLW	50,060
RESUSE WEST 6 **	2.23	-10.5' NGVD /-8.1' MLLW	48,690
RESUSE WEST 7 **	2.50	-10.5' NGVD /-8.1' MLLW	48,780
CROWN POINT REUSE 2	3.35	BEACH	9,050
REUSE AREA 10	3.75	BEACH	8,780
LEISURE LAGOON	2.45	-7.5' NGVD /-5.1' MLLW	8,320
REUSE AREA 11	2.06	BEACH	5,900
<b>TOTAL REUSE</b>	<b>19.47</b>		<b>220,850</b>

\*\*FILL VOLUME INCLUDES DREDGING CUT VOLUME AND 1-FT AND 2-FT OVER DREDGING VOLUMES



**Table 3. Total dredge area, eelgrass impact and predicted eelgrass from restoration actions**

SITE	AREA (ACRES)	EELGRASS IMPACT (ACRES)	EELGRASS TRANSPLANT AREA (ACRES)	PREDICTED SUCCESS RATE (%)	PREDICTED EELGRASS RESTORED (ACRES)
<b>DREDGE SITES</b>					
DREDGE 1A	15.87	15.87	15.87	95%	15.08
DREDGE 1B	0.52	0.52	0.52	95%	0.49
DREDGE 1C	0.63	0.63	0.63	95%	0.60
DREDGE 1D	0.41	0.41	0.41	95%	0.39
DREDGE 2	0.41	0.41	0.41	95%	0.39
DREDGE 3	2.84	2.57	2.84	95%	2.70
DREDGE 4	0.8	0.64	0.80	95%	0.76
DREDGE 5A	13.5	13.30	13.50	95%	12.83
DREDGE 6	0.67	0.42	0.67	95%	0.64
DREDGE 7	1.3	1.30	1.30	95%	1.24
DREDGE 9	1.94	0.97	1.94	52%	1.01
DREDGE 10	3.61	2.01	3.61	52%	1.88
DREDGE 11	1.67	0.64	1.67	52%	0.87
DREDGE 12A	11.44	0.99	0.00	NA	0
DREDGE 12B	0.13	0.00	0.00	NA	0
DREDGE 12C	0.11	0.06	0.00	NA	0
DREDGE 12D	0.07	0.04	0.00	NA	0
DREDGE 12 E	0.21	0.04	0.00	NA	0
DREDGE 12F	0.08	0.00	0.00	NA	0
DREDGE 13 & 14	3.78	0.78	3.78	71%	2.68
DREDGE 15	3.37	1.31	3.37	70%	2.36
<b>TOTAL DREDGE</b>	<b>63.36</b>	<b>42.93</b>	<b>51.32</b>		<b>43.90</b>
<b>REUSE SITES</b>					
REUSE WEST 3	2.51	-	2.51	95%	2.38
REUSE WEST 4	2.69	-	2.69	95%	2.55
REUSE WEST 6	2.23	-	2.23	95%	2.12
REUSE WEST 7	2.50	-	2.50	95%	2.37
LEISURE LAGOON	2.45	-	2.45	95%	1.74
<b>TOTAL REUSE</b>	<b>12.37</b>	<b>-</b>	<b>12.37</b>		<b>11.17</b>
<b>PROJECT TOTAL</b>	<b>75.73</b>	<b>43</b>	<b>63.69</b>		<b>55.07</b>

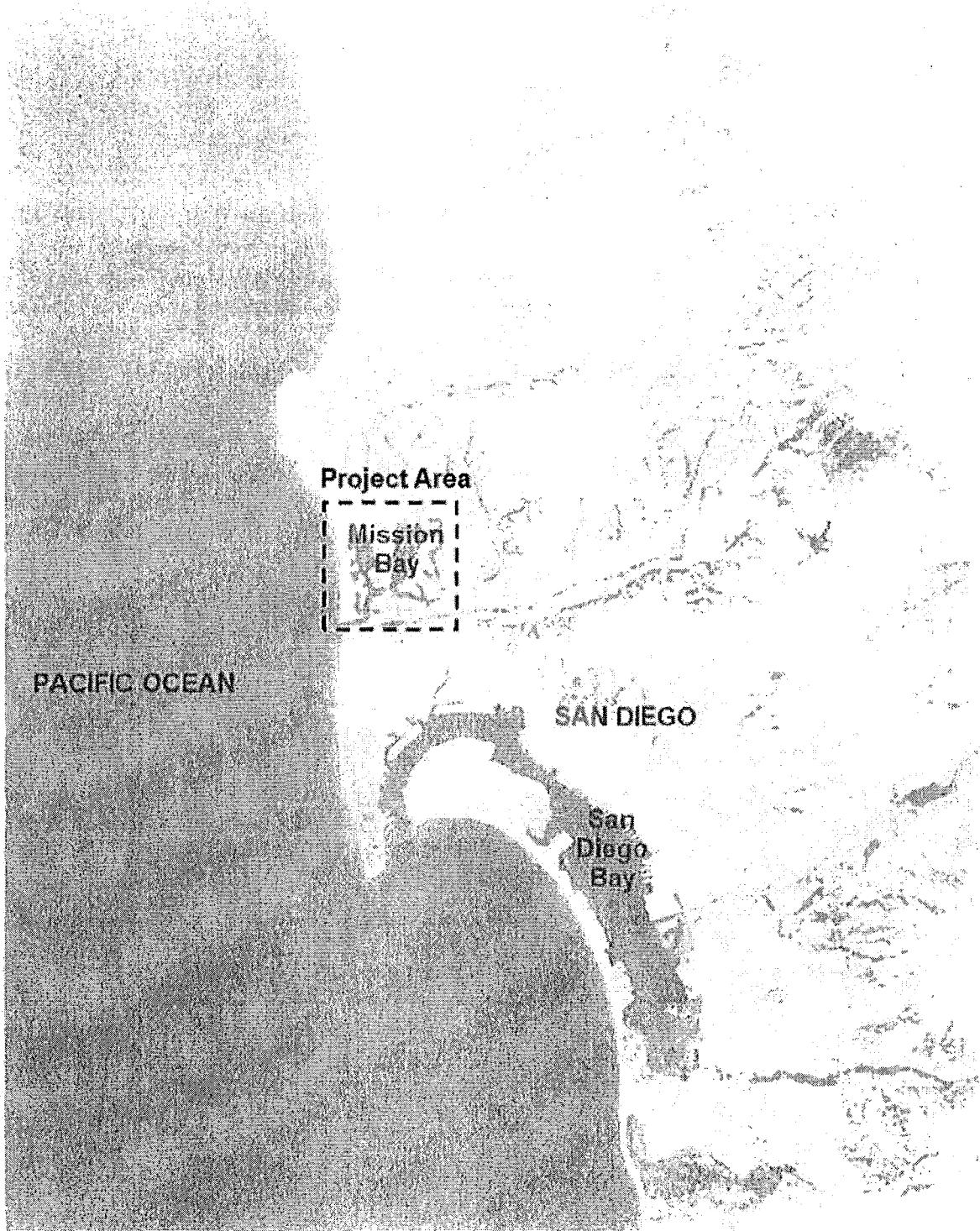
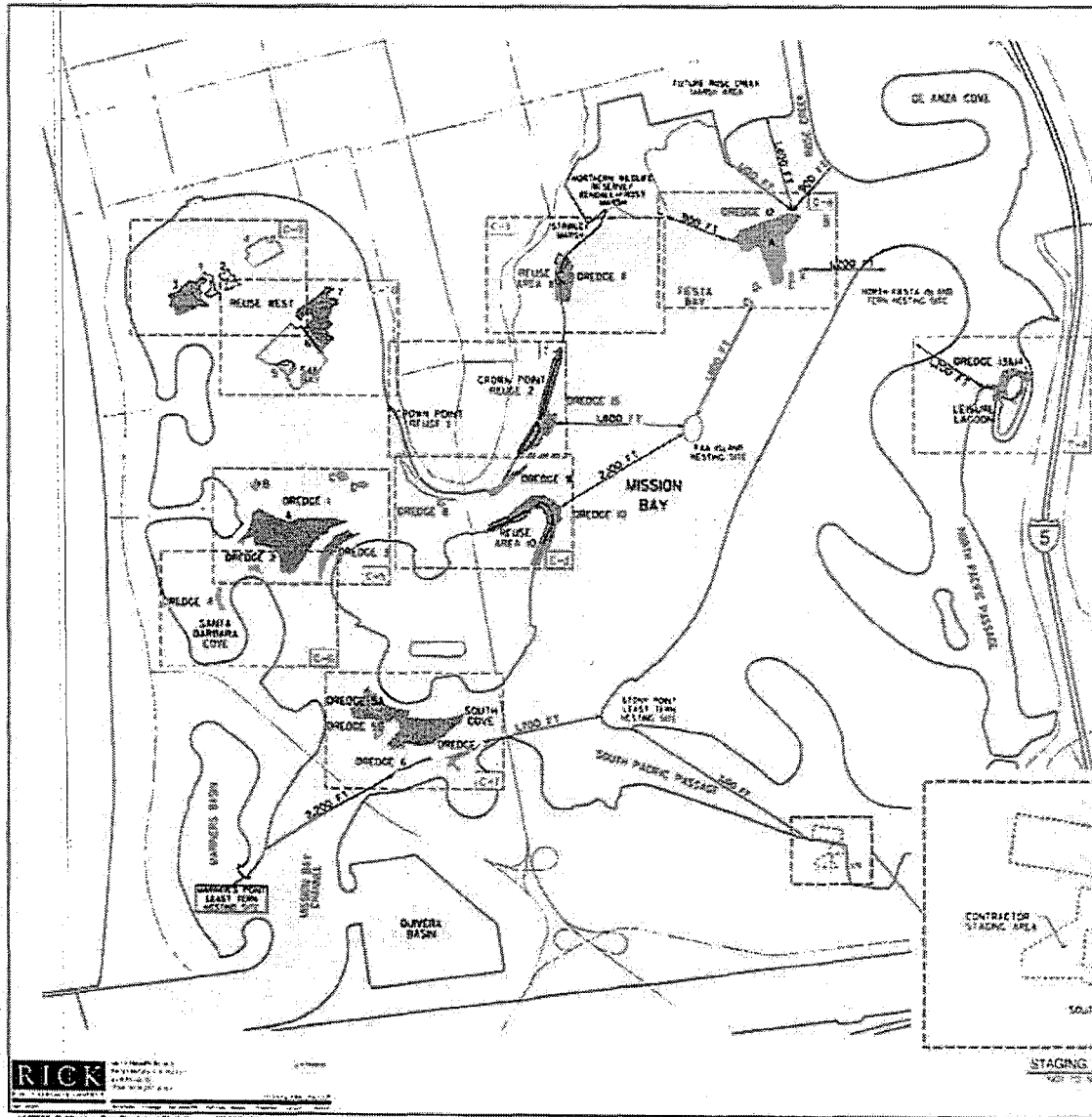


Figure 1. Vicinity Map

MISSION BAY NAVIGATIONAL SAFETY DREDGING



SITE	AREA (ACRES)	DREDGE (CUB YD)	CUT VOLUME (CU)	EST. VOLUME (CU)	S-11 NON-PAID ALLOWABLE OVERBORROW (CU)	S-11 PAID ALLOWABLE OVERBORROW (CU)	REGIONS IMPACT (ACRES)	REGIONS TRANSPLANT AREA (ACRES)	PREDICTED DISBURSED (ACRES) MFC
DREDGE 1	0.43	10,500	10,500	10,500	0	0	0	0	11.07
DREDGE 2	0.33	10,500	10,500	10,500	0	0	0	0	8.99
DREDGE 3	0.41	10,500	10,500	10,500	0	0	0	0	6.40
DREDGE 4	0.41	10,500	10,500	10,500	0	0	0	0	5.70
DREDGE 5	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 6	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 7	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 8	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 9	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 10	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 11	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 12	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 13	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 14	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 15	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 16	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 17	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 18	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 19	0.41	10,500	10,500	10,500	0	0	0	0	6.70
DREDGE 20	0.41	10,500	10,500	10,500	0	0	0	0	6.70
TOTAL DREDGE	8.36	212,500	212,500	212,500	0	0	0	0	68.00

REGIONS IMPACT	AREA (ACRES)	FILL VOL (CU)	REGIONS TRANSPLANT AREA (ACRES)	PREDICTED DISBURSED (ACRES) MFC
REGIONS IMPACT	0.00	0.00	0.00	0.00
REGIONS TRANSPLANT	0.00	0.00	0.00	0.00
PREDICTED DISBURSED	0.00	0.00	0.00	0.00
TOTAL REGIONS IMPACT	0.00	0.00	0.00	0.00

LEGEND

- [Symbol] DREDGE AREAS
- [Symbol] RUSSIA AREAS



MISSION BAY NAVIGATIONAL SAFETY DREDGING

KEY MAP

OFF OF SAN DIEGO CALIFORNIA  
 DATE: 08/18/2017  
 SHEET 2 OF 10 SHEETS

PROJECT: MISSION BAY NAVIGATIONAL SAFETY DREDGING  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]

DATE: 08/18/2017

30721-02-D

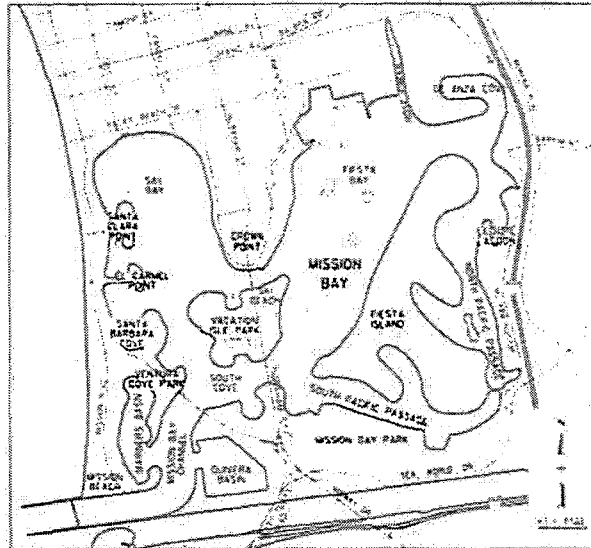


4:57:00 AM - Mission\_Bay\_Dredging\_Key\_Map.dwg (17/08/2017 09:51 AM)

# MISSION BAY NAVIGATIONAL SAFETY DREDGING

### CONTRACTOR'S RESPONSIBILITIES

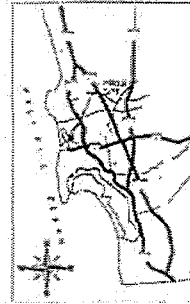
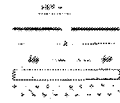
BEFORE TO REVISION 001 OF THE PREVIOUS DRAWINGS, THE CONTRACTOR SHALL AT LEAST 2 WORKING DAYS BEFORE TO REVISION 001 CONTACT THE REGIONAL NAVIGATION CENTER (RNC) AND THE SAN DIEGO DISTRICT ENGINEER (DE) TO OBTAIN APPROVAL FOR ANY CHANGES TO THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CHANGES TO THE DRAWINGS.



WORK IS TO BE DONE IN THE APPROXIMATE LOCATIONS OF THE FOLLOWING WORKPOINTS, WHICH ARE TO BE OPEN UP TO THE WATER AT THE POINT OF OPERATION AND THE VERTICAL ELEVATION OF THE TOP OF THE BAY COAST.

- WORK POINT
- WATER CONTROL
- WATER CONTROL
- DREDGING
- DREDGING AREA
- WATER AREA

### LEGEND



### CONTRACTOR'S RESPONSIBILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL MONUMENTS WHICH ARE NEAR THE PROJECT LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF ANY MONUMENTS WHICH ARE NEAR THE PROJECT LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF ANY MONUMENTS WHICH ARE NEAR THE PROJECT LOCATION.

### REVISIONS

NO.	DATE	DESCRIPTION	DRAWN	CHECKED
1	02/01/00	ISSUE SHEET		
2	02/01/00	REVISED		
3	02/01/00	REVISION		
4	02/01/00	REVISION		
5	02/01/00	REVISION		
6	02/01/00	REVISION		
7	02/01/00	REVISION		
8	02/01/00	REVISION		
9	02/01/00	REVISION		
10	02/01/00	REVISION		
11	02/01/00	REVISION		
12	02/01/00	REVISION		

### CONSTRUCTION CODE

NO.	DESCRIPTION	NO.	DESCRIPTION
1	CROWN POINT	10	REVISION
2	...	11	...

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF ANY MONUMENTS WHICH ARE NEAR THE PROJECT LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF ANY MONUMENTS WHICH ARE NEAR THE PROJECT LOCATION.

### PROJECT DATA

DESCRIPTION: DREDGING OF MISSION BAY. PROJECT NUMBER: 39721-01-D. SHEET NUMBER: 1 OF 15 SHEETS. DATE: 02/01/00.

### HORIZONTAL AND VERTICAL CONSTRAINT POINTS

CONSTRAINT POINT NO. 1: (1234567.89, 8765432.10). CONSTRAINT POINT NO. 2: (9876543.21, 10987654.32).

### CHECK POINTS

CHECK POINT NO. 1: (123456.78, 987654.32). CHECK POINT NO. 2: (567890.12, 345678.90).

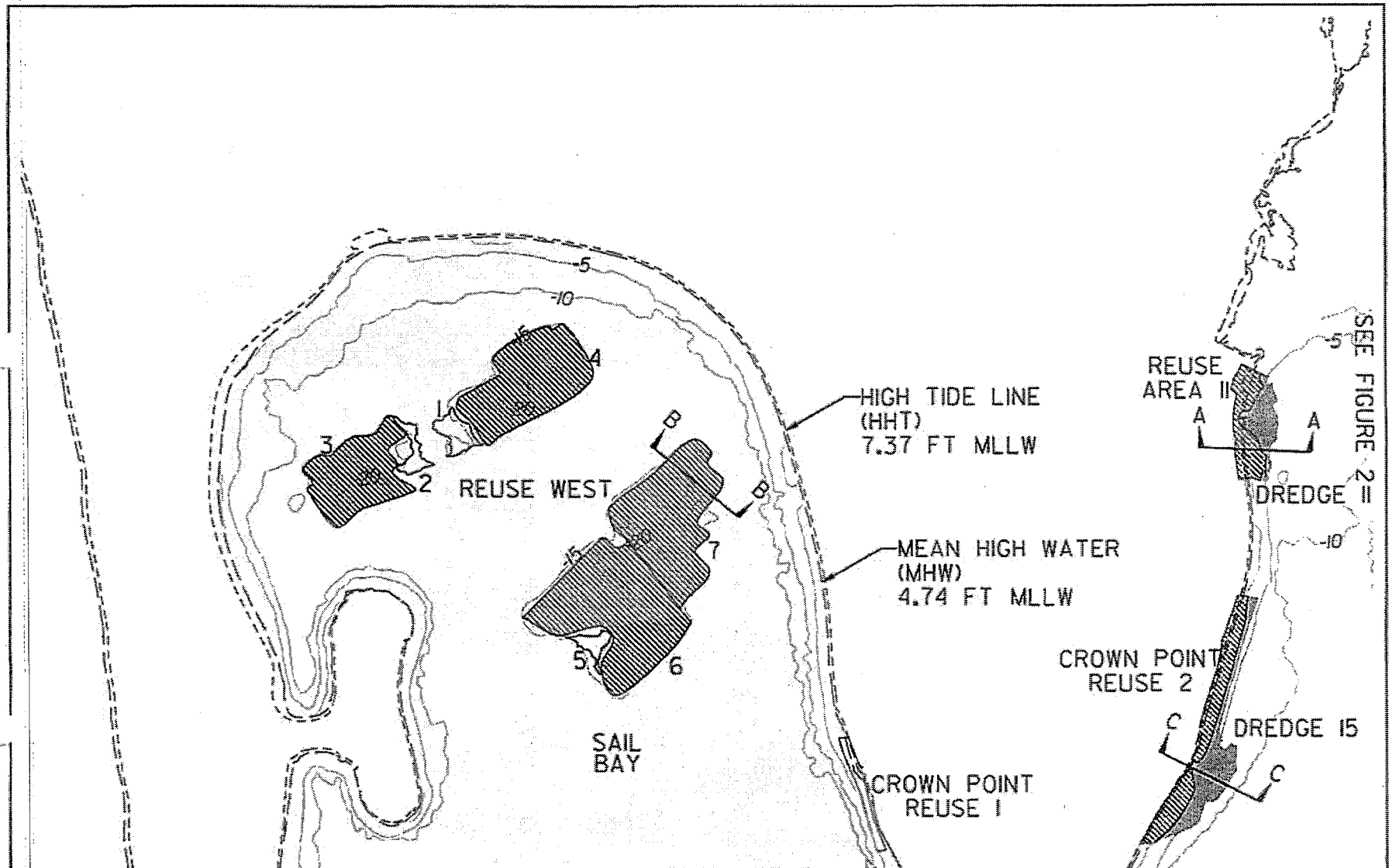
### PLANS FOR THE CONSTRUCTION OF MISSION BAY NAVIGATIONAL SAFETY DREDGING COVER SHEET

NO.	DATE	DESCRIPTION	BY	CHKD.
1	02/01/00	ISSUE SHEET		
2	02/01/00	REVISION		
3	02/01/00	REVISION		



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MISSION BAY NAVIGATIONAL SAFETY DREDGING



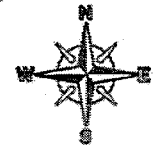
**LEGEND**

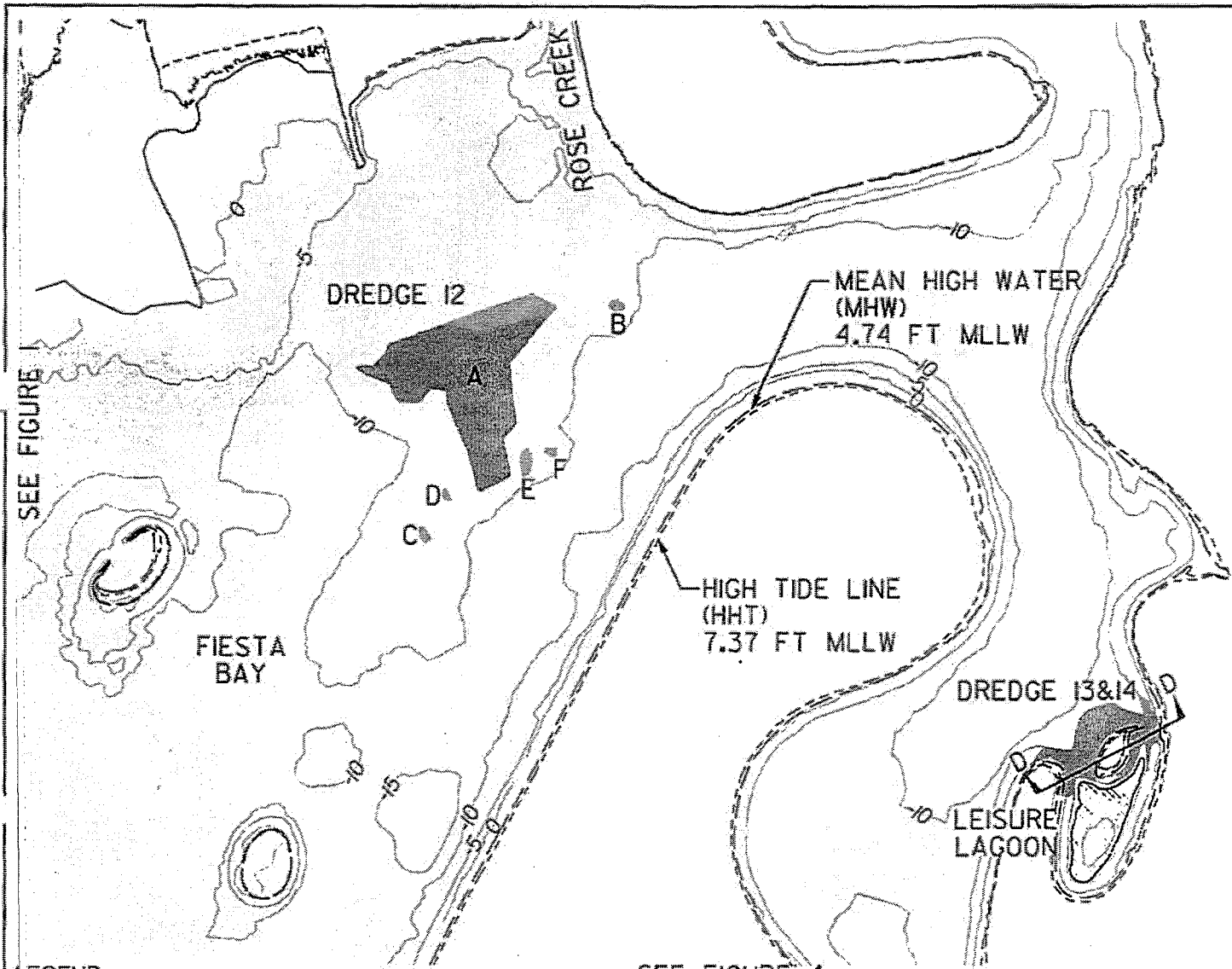
-  DREDGE AREAS
-  REUSE AREAS

**RICK**  
ENGINEERING COMPANY  
5620 FRIARS ROAD  
SAN DIEGO, CA 92110  
619-291-0707  
(FAX) 619-291-4165

**MISSION BAY NAVIGATIONAL SAFETY DREDGING  
FIGURE I**

SEE FIGURE 3





**LEGEND**

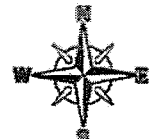
-  DREDGE AREAS
-  REUSE AREAS

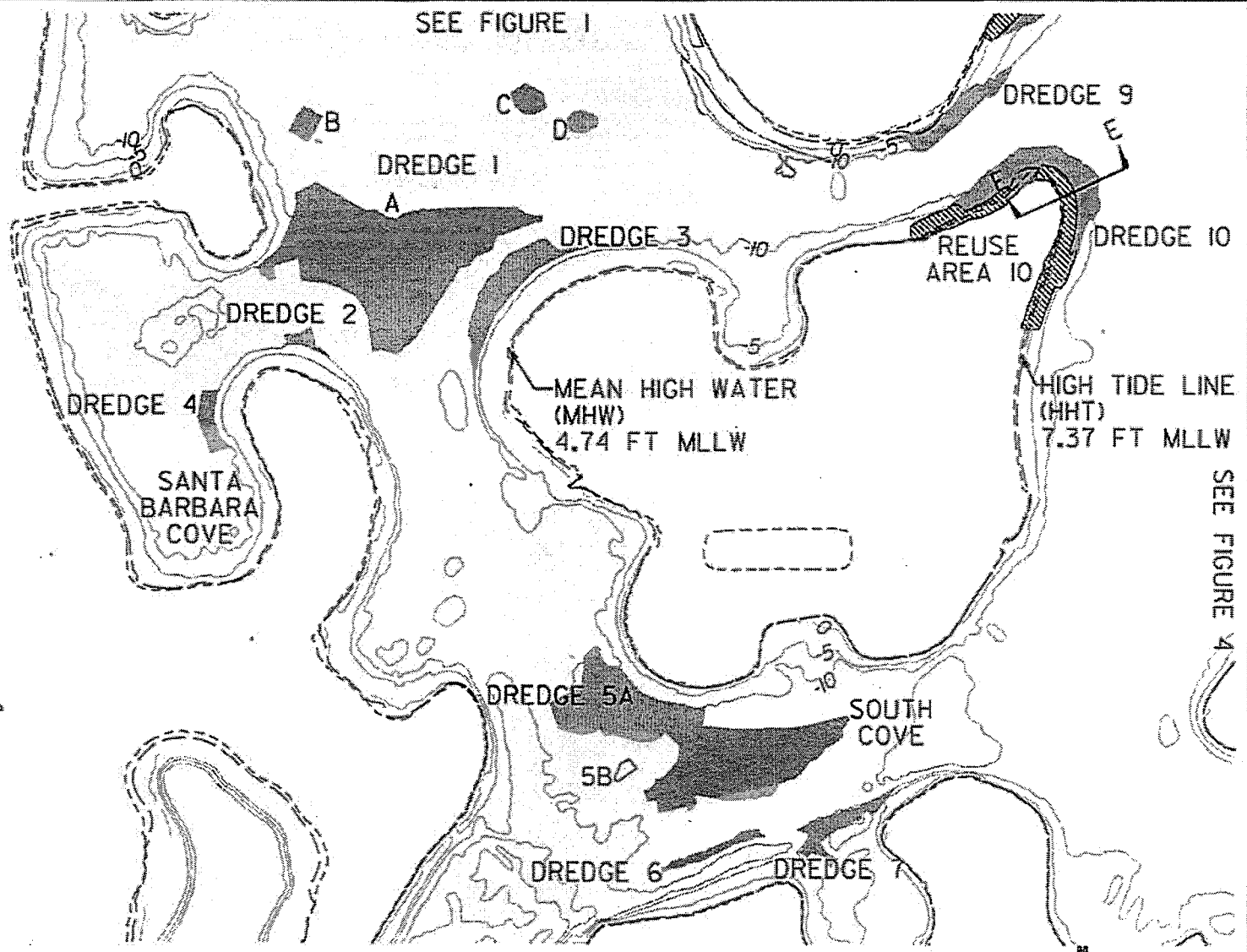


5620 FRIARS ROAD  
SAN DIEGO, CA 92110  
619-291-0707  
(FAX) 619-291-4165

**MISSION BAY NAVIGATIONAL SAFETY DREDGING  
FIGURE 2**

SEE FIGURE 4





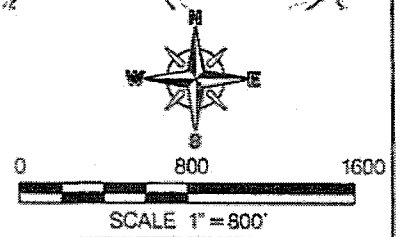
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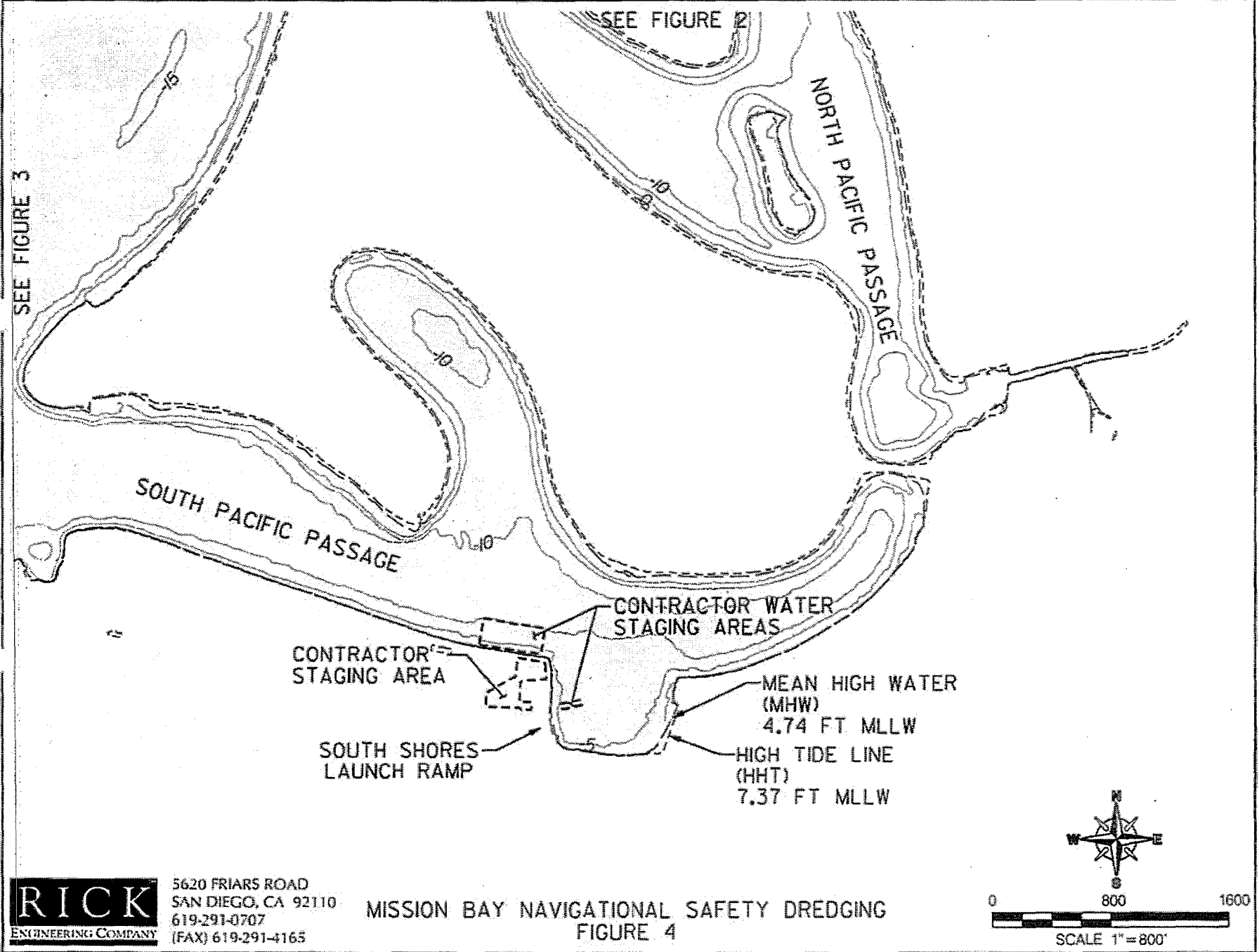
-  DREDGE AREAS
-  REUSE AREAS

**RICK**  
ENGINEERING COMPANY

5620 FRIARS ROAD  
SAN DIEGO, CA 92110  
619-291-0707  
(FAX) 619-291-4165

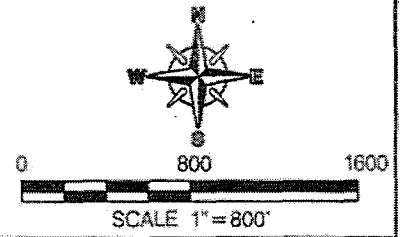
MISSION BAY NAVIGATIONAL SAFETY DREDGING  
FIGURE 3



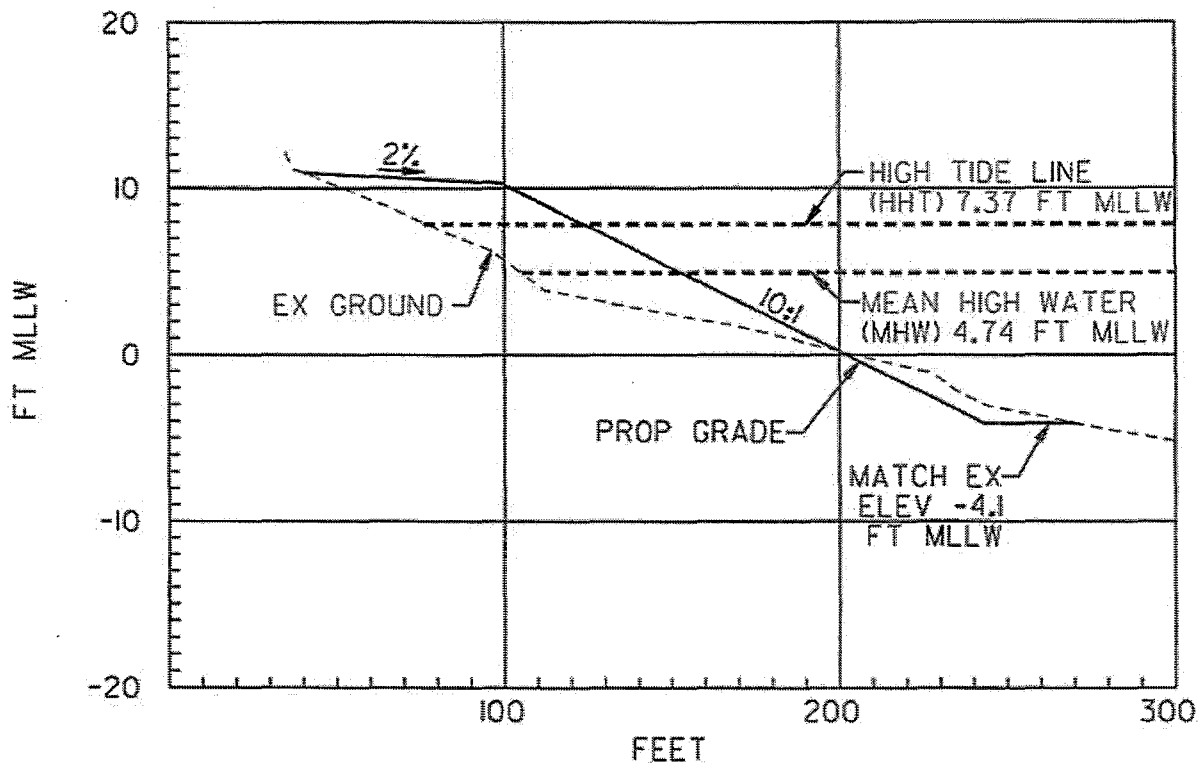


5620 FRIARS ROAD  
 SAN DIEGO, CA 92110  
 619-291-0707  
 (FAX) 619-291-4165

MISSION BAY NAVIGATIONAL SAFETY DREDGING  
 FIGURE 4



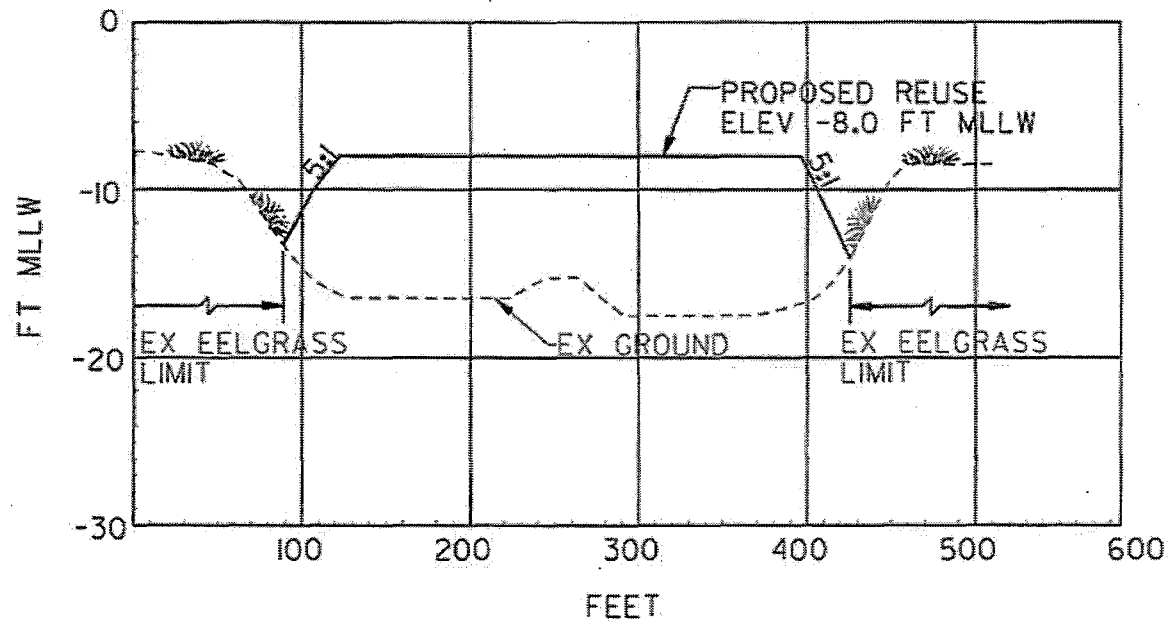




CROSS SECTION A  
 1"=50' HORIZ.  
 1"=10' VERT.

**RICK**  
 ENGINEERING COMPANY  
 5620 FRIARS ROAD  
 SAN DIEGO, CA 92110  
 619-291-0707  
 (FAX) 619-291-4165

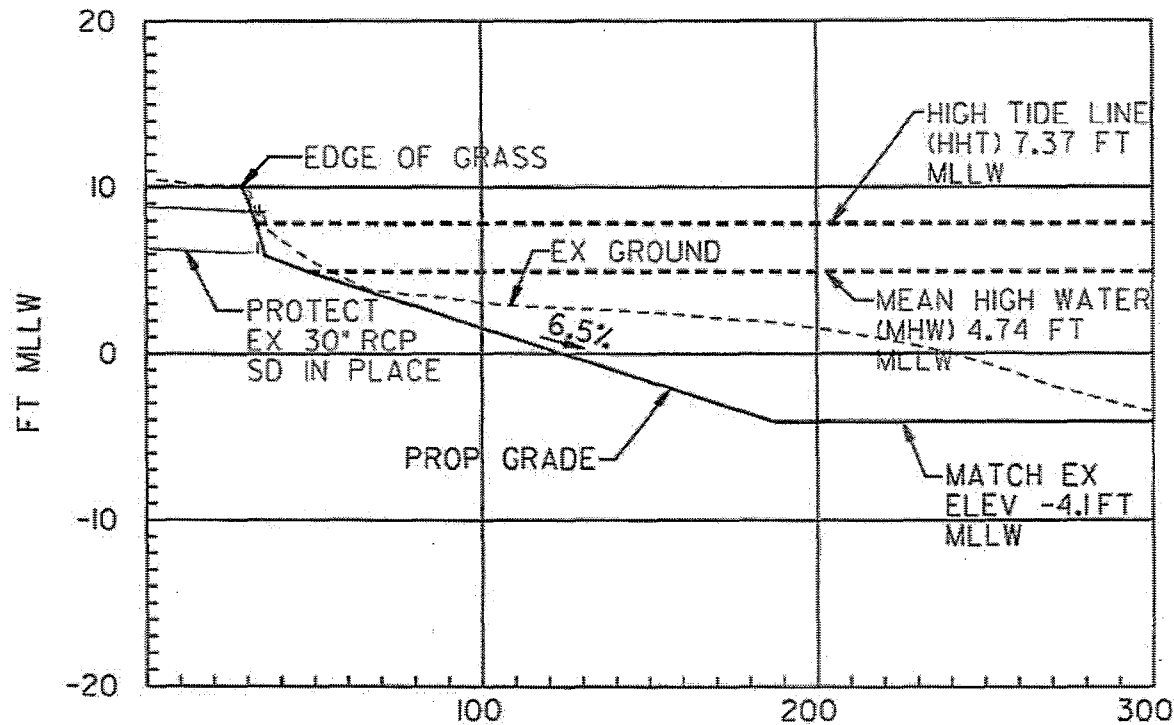
FIGURE 5



**CROSS SECTION B**  
 1"=100' HORIZ.  
 1"=10' VERT.

**RICK** ENGINEERING COMPANY  
 5620 FRIARS ROAD  
 SAN DIEGO, CA 92110  
 619-291-8707  
 (FAX) 619-291-4165

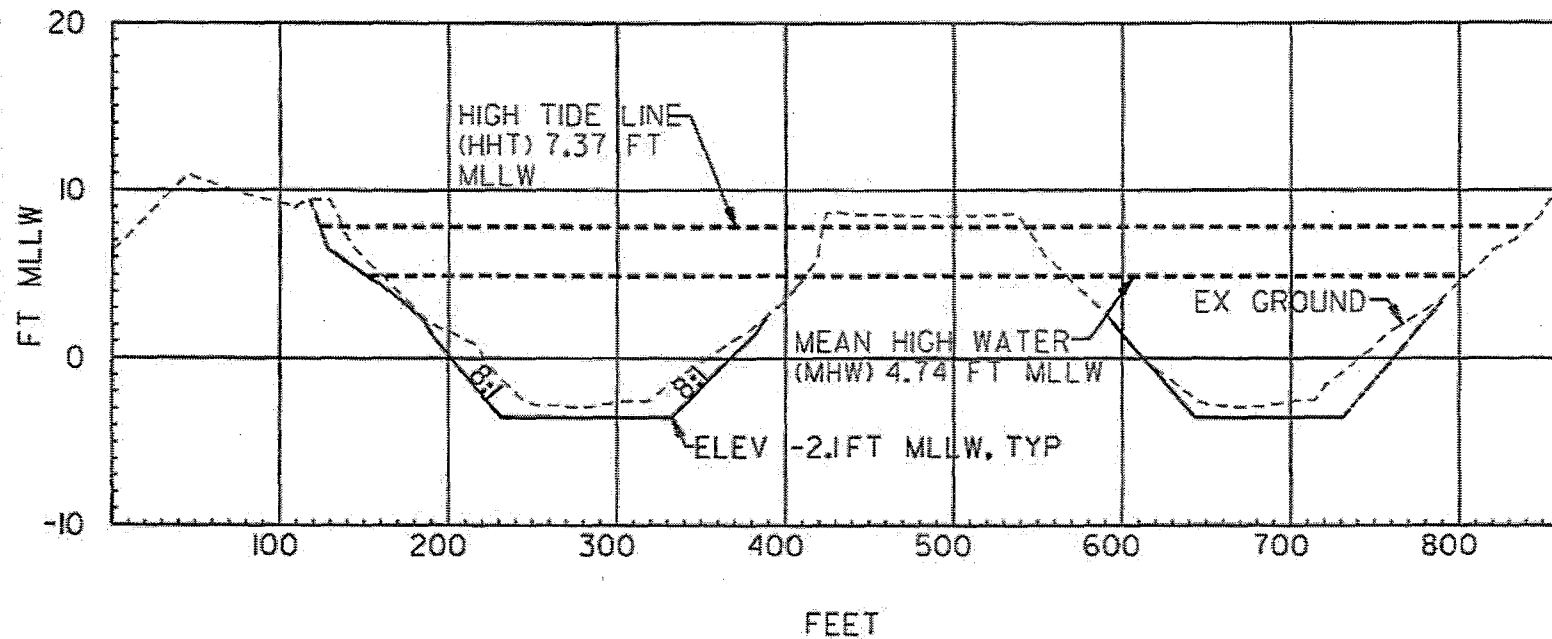
FIGURE 6



CROSS SECTION C  
 1"=50' HORIZ.  
 1"=10' VERT.

**RICK**  
 ENGINEERING COMPANY  
 3620 FRIARS ROAD  
 SAN DIEGO, CA. 92118  
 619-291-0707  
 (FAX) 619-291-4163

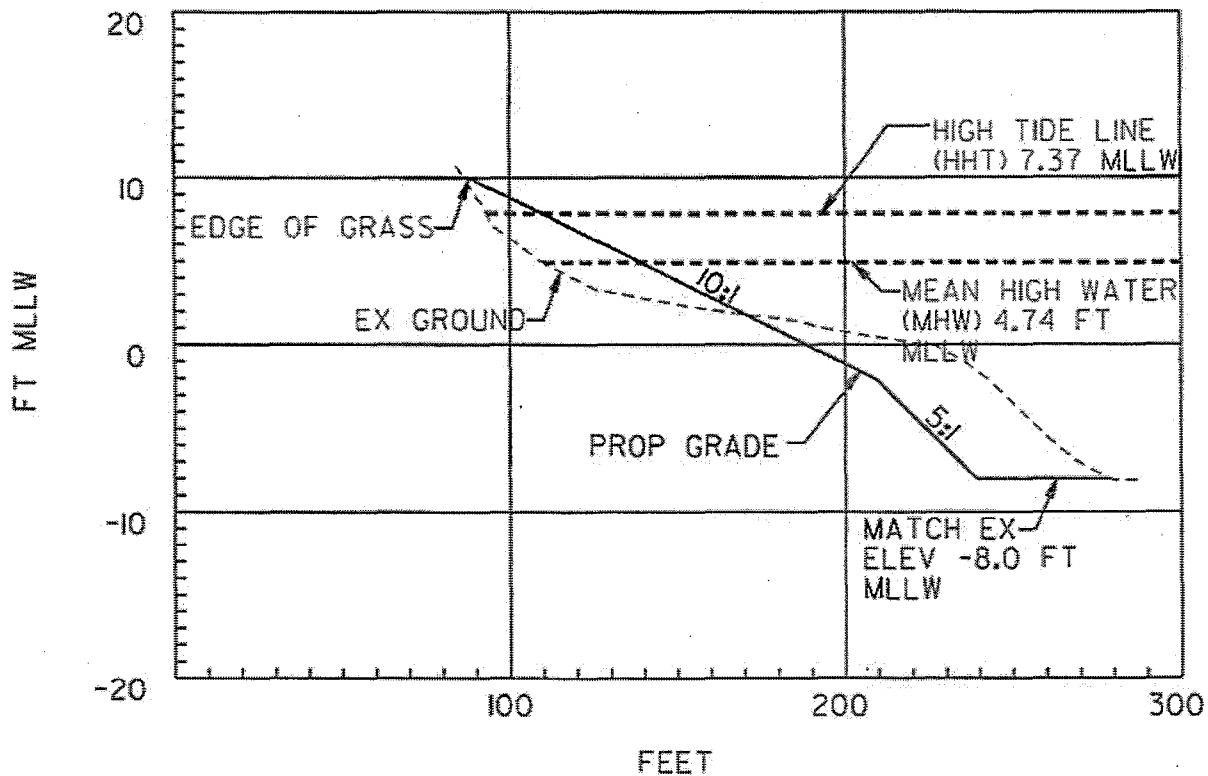
FIGURE 7



CROSS SECTION D  
 1"=100' HORIZ.  
 1"=10' VERT.

**RICK**  
 ENGINEERING COMPANY  
 5620 FRIARS ROAD  
 SAN DIEGO, CA 92110  
 619-291-8787  
 (FAX) 619-291-4165

FIGURE 8



**CROSS SECTION E**  
 1"=50' HORIZ.  
 1"=10' VERT.

**RICK**  
 ENGINEERING COMPANY  
 5620 FRIARS ROAD  
 SAN DIEGO, CA 92110  
 619-291-0707  
 (FAX) 619-291-4165

**FIGURE 9**

# City of San Diego

CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, Email: ASanfilippo@sandiego.gov  
Phone No. (619) 533-3439, Fax No. (619) 533-3633

## ADDENDUM B

 **e - Bidding** FOR



## MISSION BAY NAVIGATIONAL SAFETY DREDGING

BID NO.: \_\_\_\_\_ K-18-1576-DBB-3  
SAP NO. (WBS/IO/CC): \_\_\_\_\_ B-10163  
CLIENT DEPARTMENT: \_\_\_\_\_ 1714  
COUNCIL DISTRICT: \_\_\_\_\_ 2  
PROJECT TYPE: \_\_\_\_\_ GG

---

### BID DUE DATE:

**2:00 PM**  
**SEPTEMBER 26, 2017**  
**CITY OF SAN DIEGO**  
**PUBLIC WORKS CONTRACTS**  
**1010 SECOND AVENUE, 14<sup>th</sup> FLOOR, MS 614C**  
**SAN DIEGO, CA 92101**

**A. CHANGES TO CONTRACT DOCUMENTS**

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

James Nagelvoort, Director  
Public Works Department

Dated: *September 11, 2017*  
San Diego, California

JN/RWB/egz

# City of San Diego

CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, Email: ASanfilippo@sandiego.gov  
Phone No. (619) 533-3439, Fax No. (619) 533-3633

## ADDENDUM A

 **e - Bidding** FOR



## MISSION BAY NAVIGATIONAL SAFETY DREDGING

BID NO.:	K-18-1576-DBB-3
SAP NO. (WBS/IO/CC):	B-10163
CLIENT DEPARTMENT:	1714
COUNCIL DISTRICT:	2
PROJECT TYPE:	GG

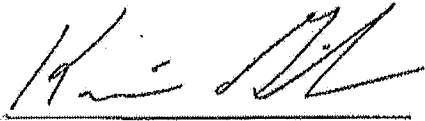
### **BID DUE DATE:**

**2:00 PM**  
**SEPTEMBER 13, 2017**  
**CITY OF SAN DIEGO**  
**PUBLIC WORKS CONTRACTS**  
**1010 SECOND AVENUE, 14<sup>th</sup> FLOOR, MS 614C**  
**SAN DIEGO, CA 92101**



# ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineers:



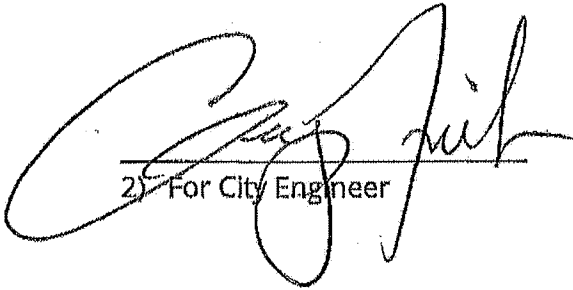
1) Registered Engineer

8/31/2017

Date

Seal:



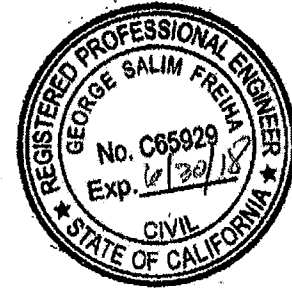


2) For City Engineer

8/31/2017

Date

Seal:



**A. CHANGES TO CONTRACT DOCUMENTS**

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

**B. BIDDER'S QUESTIONS**

Q1. Reference is made to SUPPLEMENTARY SPECIAL PROVISIONS – SECTION 9 – MEASUREMENT AND PAYMENT – 9-3.4.1 and to the limitation that the Bid Item for "Mobilization" shall not exceed 6% (3% for mobilization and 3% for demobilization).

By its very nature, dredging involves a significant amount of very specialized equipment that requires a substantial effort to mobilize to the site of the work, since no such equipment is currently stationed within Mission Bay.

Accordingly, it is strongly recommended that this 6% limitation on Mobilization be eliminated.

A1. No changes to the bid item "mobilization" shall be made.

Q2. Within SUPPLEMENTARY SPECIAL PROVISIONS – SECTION 300 – EARTHWORK – 300-2.11 Measurement, there is a reference to "quantities being determined by comparing pre-removal survey and post removal surveys (performed one time per location by the City).

Please clarify if these pre-removal and post removal surveys will be performed by the City of San Diego's own surveyors,"

Or, will the City utilize the services of an outside hydrographic survey firm?

A2. The City will be hiring an outside Surveyor to perform the Pre-dredging and acceptance surveys.

Q3. If an outside hydrographic survey firm is to be utilized, please advise what firm the City has selected.

A3. O'Day Consultants will complete the survey work.

- Q4. If the City use the services of an outside hydrographic survey firm, may the Contractor also utilize the same firm to perform any interim surveys that the Contractor desires to have done?
- A4. The Contractor is able to utilize any firm or its own staff to complete survey work for interim surveys. The Contractor may do as much or as little interim survey as it deems necessary to monitor dredging and report on progress. However, all payment survey shall be completed by the City's survey consultant. Should an area fail to meet specified depths and surface conditions during the payment survey, the Contractor will be responsible for costs incurred in a resurvey by the City's survey consultant.
- Q5. It is requested that we be provided with the electronic survey data from the most recent bathymetric survey performed within the Mission Bay Dredge Sites. Please provide this information in xyz format.
- A5. The selected Contractor will be provided all of the digital files needed to support project construction.
- Q6. As noted within the EELGRASS MITIGATION AND MONITORING PLAN IN SUPPORT OF THE MISSION BAY PARK NAVIGATIONAL SAFETY DREDGING PROJECT MISSION BAY, SAN DIEGO, CALIFORNIA the 73 acres of eelgrass restoration planting program required for the Mission Bay Navigational Safety Dredging is larger than any prior active eelgrass restoration project undertaken in California in a single planting season. With the seasonal planting limitations, and considerations for maintaining the boating activities within Mission Bay, the completing of the planting of these 73 acres in one season seems impractical.
- Q6a. Would the City consider extending the planting to a second season?
- A6a. Per Agency Permit requirements, planting must be complete immediately following the dredging work. The City has considered the nature and scale of the work and determined that it can be completed in the time allotted.
- Q6b. Has the City considered separating the dredging from the eelgrass, i.e. issuing two separate contracts for this work – allowing the dredging to be conducted independently from the eelgrass planting?
- A6b. The City has considered the separation of the contracts but believes that coordination between the dredging and eelgrass

planting is important to ensuring effective salvage and translocation of material to meet resource agency requests to maximize harvest from dredge areas.

- Q7. Reference is made to the 60-Month Revegetation Maintenance and Monitoring Agreement – Bid Item 14.

Please clarify if the City will withhold retention for the entire duration of the 220-calendar day contract as well as the 60-Month Revegetation Maintenance and Monitoring period for a total of six (6) years.

- A7. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.

- Q8. Within SUPPLEMENTARY SPECIAL PROVISIONS – SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR - 7-5 PERMITS, FEES, AND NOTICES there is the requirement that:

3. The Contractor shall comply with conditions and requirements of the Corps of Engineers Permit, Coastal Development Permit, Regional Water Quality Control Board Certification, and other State, Park, City and Federal permits as provided by the City. The City will secure the permits for dredging and disposal of material as indicated. The permits are included as an appendix to this document. Ingress/egress and land and water public safety requirements are of particular interest for this project. Air quality permits shall be obtained by the Contractor.

We have not been able to locate the Corps of Engineers Permit. Since the Corps Permits is not listed as one of the Appendixes, please identify which Appendix includes the Corps of Engineers Permit that the Contractor is to comply with.

- A8. An appendix will be added to include all permits that have been issued at this time.

- Q9. Reference is made to APPENDIX K - LONG-TERM REVEGETATION MAINTENANCE AGREEMENT – 60-MONTH REVEGETATION MAINTENANCE AND MONITORING AGREEMENT - SECTION 1 - MAINTENANCE CONTRACT SUMMARY - 1.5. License. The Contractor shall hold the following licenses in good standing:

- a) Registration with the County Agriculture Commission.
- b) City of San Diego Business License.

Prior to performing the Work, the Contractor shall complete and submit to the City the License Data Sheet. See Exhibit C.

Exhibit C requires that the Long Term Revegetation Maintenance Contractor have:

State Contractor License Classification and Number:

Pest Control Applicator's License Number

Pest Control Advisor's License Number

- a) Historically most of the firms performing eelgrass planting / transplanting / revegetation are service companies (including potential SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors) that are not typically required to have these licenses, it is requested that these Contractor licensing requirement be eliminated from the Contract.
- A9. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.
- Q10. Since Appendix K appears to only apply to the 60-Month Revegetation Maintenance and Monitoring portion of the Contract and NOT to the actual eelgrass transplanting, please confirm that these licensing requirements do NOT apply to the firm actually performing the transplanting BUT ONLY to the firm performing the Long-Term Revegetation Maintenance.
- A10. The actual transplanting firm is required to have a valid City of San Diego Business License but not the requirements specified in Appendix K. However, the 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.
- Q11. What State Contractor License Classification would be required of the Long Term Revegetation Maintenance Contractor?
- A11. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.

Q12. While we recognize the Merkel and Associates is one of the premier eelgrass contractors, by their involvement with the development of the plans, specifications and having performed the various eelgrass surveys, is Merkel and Associated precluded from bidding as a General Contractor or Subcontractor on the Mission Bay Navigational Safety Dredging project?

A12. Merkel and Associates cannot bid as a General Contractor nor a Subcontractor for the Mission Bay Navigational Safety Dredging project.

Q13. Within the Contract Specifications Supplementary Special Provisions Section 1 – Terms, Definition, Abbreviations, Units of Measure and Symbols – 1-2 Terms and Definitions The Normal Working Hours for Excavation and Dredging have been established at 7:00 AM to 7:00 PM, Monday through Saturday, while the Normal Working Hours for Planting are 7:00 AM to 5:00 PM, Monday through Friday.

Please explain the limitations on the planning to only five (5) days per week and ten (10) hours per day.

It is requested that the Planting Work Hours be changed to coincide with the Dredging Work Horus

A13. Normal Working Hours have been modified to extend the available working days and hours for planting. See modifications to Attachment E, Supplementary Special Provisions, in this Addendum.

Q14. Reference is made to Contract Specifications Supplementary Special Provisions – Technicals – Part 1 General 1.01 Scope B – the statement is made: “The collection of transplant materials...”

Please clarify if the “collection of transplant materials” is restricted to Mission Bay, or may transplant materials be brought in from other sources?

A14. All plant materials shall be derived from Mission Bay and shall only come from donor sites coordinated with and approved by the City.

Q15. Please clarify if dredging of areas infested with eelgrass will be allowed, or must the collection of eelgrass be completed within a dredge site prior to commencing dredging in that dredge area?

A15. Dredging from areas supporting eelgrass is allowed. There is an obligation to attempt to derive eelgrass from areas to be dredged as priority before taking from donor sites, but there is no obligation to delay dredging to accommodate salvage from these areas.

- Q16. It is requested that the City provide data on the heights and clearance distances for their West Mission Bay Drive Bridge and for the Ingraham Street Bridges (North and South).
- A16. The clearance varies beneath the bridges and Contractor should verify bridge clearances for itself. No additional information is provided.
- Q17. Please clarify the surveying / project staking being provided by the City of San Diego.
- A17. The City has retained an independent surveyor O'Day Consultants. The City's contract surveyor will complete surveys and provide digital data in xyz files for use by the City and Contractor to input into electronic navigation and dredge control systems. The City will also provide design files in CADD format. The City will not provide any physical staking but shall provide Contractor with needed digital data to support navigation and dredge control using standard electronic positioning software.
- Q18. What is the SLBE percentage required for this job, estimated bid value \$9 M?
- A18. See "Notice Inviting Bids - item 7 SUBCONTRACTING PARTICIPATION PERCENTAGES".
- Q19. Bid Item #11 - Eel grass planting - how many working days are we allowed to perform this work?
- A19. See Attachment A - Scope of Work, Item 4.3.
- Q20. Protection of the newly planted Eel grass from boat anchors, jet skis, boat landings, Windsurfers, Kiteboarders, recreational residents usage, is the City to protect the newly plante Eel grass or this is the job of the Prime Contractor?
- A20. No special protection of newly planted eelgrass is anticipated to be required. It is anticipated that existing on-water bay use regulations are adequate to meet this purpose. Neither the Contractor, nor the City is responsible for protecting eelgrass from standard activities presently established on Mission Bay.

- Q21. What percentage of the Eel grass planting is:
- Q21a. Planting at low tide near the beach?
- A21a. All of the eelgrass is proposed to be established at 0 feet MLLW or below (-2.13 NGVD29). Very little will be plantable from shore during low tides.
- Q21b. Planting in deep water which requires divers?
- A21b. The majority of the eelgrass is to be planted at depths that will require diving. Contractors are directed to project plans to review design depths.
- Q22. 30 day PEP, this cannot be performed for all acreage, there must be a 30 day PEP for each acre of Eel grass planting?
- A22. Contractor may commence the PEP for completed areas as they are planted such that each planting area has its own PEP. Eel grass planting has been modified to **169 working days** per this Addendum.
- Q23. Eel grass harvesting or transplanting, can the harvesting be performed during dredging?
- A23. There is anticipated to be some overlap between dredging and planting. This will occur during the spring months. If eelgrass does not go dormant during the winter, the City may allow earlier start of planting and an extension of the planting period. However, this potential is unknown and unknowable at this time and bids should be submitted on the basis of Specifications.
- Q24. What are the locations for Eel grass storage?
- A24. Eelgrass cannot be stored. Eelgrass must be planted immediately after harvesting and preparation of planting units. See Specifications and eelgrass mitigation plan provided as Appendix G.
- Q25. Will the City provide protective cove area to store harvested Eel grass?
- A25. The Contractor shall identify donor sites desired and these shall be subject to approval by the City. Multiple donor sites shall be used as specified in Appendix G.



Q26. Please have the City list the areas of planting and the dates for each area?

A26. The Contractor's schedule will dictate the specific timing of work on the individual areas.

Q27. Page 32 of 35, page 159, Mitigation areas in acres:

- a. Beach – 3.12
- b. Shallow Bay Eel Grass – 32.93
- c. Shallow Bay unvegetated – 29.68
- d. Total acreage – 75.3

How deep are the waters where the Shallow Bay Eel grass will be transplanted?

A27. Depths vary see Plan sheets.

Q28. How deep are the water where the Shallow Bay unvegetated where the Eel grass will be transplanted?

A28. Depths vary see Plan sheets.

Q29. Is the City designating boat area to store our boats for the divers to plant the Eel grass?

A29. The Contractor is provided a Staging Area during the required work at South Shores (See Sheet G-2). No other areas are provided by the City.

Q30. Will the City block off the areas of Eel grass to be planted during the recreational boating and jet skis season, May, June, July, August and September?

A30. Site safety for the construction work is the responsibility of the Contractor. Coordination with City Lifeguard Services shall be required relative to Contractor's site protection. It is advised that the Contractor use float lines and surface vessels to protect planting areas.

Q31. Will they be extra patrols by the Police and Coast Guard in the busy sailing areas of Sail Bay, Enchanted Cover, Crown Point?

A31. City Lifeguard Services has indicated they will work with Contractor to assist in protecting work areas. However, it is incumbent upon the Contractor to provide necessary safety and security. No additional Coast Guard support is anticipated.

- Q32. Is the City blocking all planting areas and for what period of time or is this the responsibility of the Prime Contractor? The public will damage the newly transplanted Eel grass with boat anchor, boat landings, the flipping of rented Catamarans, all public residents on the beach at low tide in the newly planted areas.
- A32. No special measures are proposed to protect newly planted eelgrass. This has been successfully performed successfully on 13 prior occasions within Mission Bay and no separate protection of planting units has proven necessary in those restoration projects.
- Q33. Where in the Specs are the detail of the 60-Month Revegetation Maintenance and Monitoring Agreement, Bid Item #14, what are the requirements during the 60 month period and is replacement of Eel grass required during the 60 month Revegetation Maintenance and Monitoring?
- A33. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.
- Q34. Section 13, page 190. At the -8 foot for MLLW target depths for maintenance dredging in the east basin, is this the targeted depth for the entire project and is this a target depth for transplanting?
- A34. No. Depths of planting vary.
- Q36. Can a subcontractor subcontract another company.
- A36. The Contractor or Subcontractor company leading the eelgrass restoration must be able to fully meet the qualifications set forth. Subcontracts cannot be used to achieve qualifications but can be used to meet labor needs. Subcontracted companies must be identified at the time of bid.
- Q37. Prevailing Wages - Current descriptions provided by the DIR do not contain categories which directly apply to eelgrass tasks. Are eelgrass SCUBA divers and eelgrass bundler crews required to be paid "Prevailing Wage" rates?
- A37. Yes. DIR Determination SD-23-31-4-2017-1 issued February 22, 2017 is applicable to diving.

- Q38. During the site visit it was suggested that the actual project requirements may vary from the specifications in the RFP, and will likely be smaller. What method will the City will utilize to reconcile bid costs for the described project with prices for the final required work product?
- A38. The costs will be scaled by the number of acres to be planted at 1-meter center equivalency (4,047 planting units per acre).
- Q39. SCOPE OF WORK, 4. CONTRACT TIME: 4.3 The planting of eelgrass shall be completed within 132 Working Days inclusive of the 30 Calendar Day Plant Establishment Period. Eelgrass planting is best completed during the active growing season: March 1 – September 30"
- A39. The planting period and total number of days available for planting has been extended. See modifications to Attachment A in this Addendum.
- Q40. Does this then mean there are only 102 "working days" for planting, and the remaining 30 days are required to wait to confirm the quality of the final transplant?
- A40. The working days includes the final PEP pursuant to Section 4.3 of the Scope of Work. Please note that the 30 day PEP can be initiated on each completed planting area separately such that the final 30-day PEP only applies to the last planting area completed. The planting period and total number of days available for planting has been extended. See modifications to Attachment A in this Addendum.
- Q41. Does "working days" equate to "week days"? If so does that mean that 20.4 weeks are available to perform the transplant?
- A41. Working days equates to working days within the City of San Diego as defined in the Whitebook and excludes holidays recognized by the City.
- Q42. Does the 132-day Working Period include weather delays?
- A42. No. Weather delays will be added to the work schedule provided the delays resulted in loss of site work during the delay day. The planting period and total number of days available for planting has been extended. See modifications to Attachment A in this Addendum.

Q43. Does the 132-day period start at the beginning of the transplant or at the end of dredging?

A43. The work days commence based on a March 1 start of planting. If winter dormancy does not occur and the City believes earlier planting can occur. Additional time may be made available to the Contractor, extending the work days by planting earlier in the year. This is not guaranteed and Contractor should bid according to Specifications. The planting period and total number of days available for planting has been extended. See modifications to Attachment A in this Addendum.

Q44. If there are dredge delays (Attachment E, 6-2.1) or unsuitable substrate conditions for effecting the transplant prior to the end of the active growing season can the transplant period be extended? If delayed, how does any delay affect "6.9 Liquidated Damages"?

A44. The Contractor is responsible for meeting the project schedule. As the planting is being performed under the dredge Contract and not separately, it is the Contractor's responsibility for assessing how risks are to be apportioned across subcontractors.

Q45. TECHNICALS: Section 1.03 Qualifications, Our company has conducted four large-scale (greater than 1 acre) eelgrass transplants of 3.5 to 6.0 acres in Mission Bay and San Diego Bay. All of these projects were completed prior to 2001 and Letters of Authorization were not retained after 10 years. California Dept. of Fish and Wildlife has indicated willingness to verify our ability to obtain a LOA. Is this acceptable for validation of the company qualifications by the City?

A45. Yes. Work must have been demonstrably completed by the company a verification by CDFW would suffice for this requirement.

Q46. Section 1.05 Inspections, Please define "punch list" and provide an example.

A46. The punch list is a verification of completion of implementation of work in accordance with the terms of the plans and specifications. The punch list is an identification of shortfalls in meeting standards and provides the Contractor with an action item list to correct, unsatisfactory conditions and deficiencies. As indicated in Section 1.05. Items to be reviewed: include health of transplanted material, proper location and spacing, orientation and placement of transplanted material, and restoration of areas

incidentally disturbed during dredging and transplanting. The typical failures identified through the punch list process are inadequate planting spacing, improperly planted units, and missing gaps in the planting area.

Q47. This section includes a specification that states the Contractor is responsible for the cost of "additional inspections"; what is the estimated cost for additional inspections by the City?

A47. It is anticipated that the inspections will cost approximately \$2,500 to \$3,500 depending upon the area of inspection to be undertaken.

Q48. Should the text contained within Sections 1.06 and 1.07 be considered as recommendations or requirements?

A48. The text in Section 1.06 and 1.07 is recommended. Whether the Contractor follows the recommendations or does not, the site must meet short term performance standards as set forth in the PEP.

Q49. Section 1.07 B: DAYTIME AIR TEMPERATURE, This section specifies "the official weather report" but it does not specify which National Weather Service station is used or how-far in advance the report is issued. Is the phrase "official weather report" in this section based upon National Weather Service Station EW9870 for Mission Beach issued at 5pm the day prior to the collection and placement of transplants, or is it based on a different station and forecast time?

A49. Either Mission Beach or San Diego International Airport (Lindbergh Field) may be utilized.

Q50. PART 2: PRODUCTS: Section 2.01 Eelgrass Transplants. Section C:, Can a similar-sized "wood stick anchor" be used instead of the specified "paper stick anchor"?

A50. Yes.

Q51. If a paper stick anchor is required, does it need to be the exact size specified in the planting plan?

A51. The Contractor would need to propose an alternative to be evaluated.

- Q52. Please define the word "coolers". May other containers be used instead of "coolers" as long as the eelgrass is thermally protected?
- A52. Alternative carriers may be utilized as long as plants are thermally protected.
- Q53. PART 4. MEASUREMENT AND PAYMENT, Paragraph 4.02 ends in the word PAYMENT, This section does not indicate the method of payment for eelgrass transplanting. The third paragraph explains what is covered, but not a payment schedule. It refers to BID SCHEDULE, but no such schedule was found in the project documents. What is the progress payment schedule for eelgrass transplant work?
- A53. Planting is billable on the same schedule as dredging. Planting areas must be completed to be billable as the inspections will only occur on completed planting zones. Payment is based on acres of completed planting on a per-acre basis.
- Q54. Eelgrass Mitigation and Monitoring Plan (EMMP), It states in the EMMP that Dredge Area 12 will not be replanted due to low density eelgrass and poor recruitment. Should the bid amount for eelgrass be the for the 63.69 acres reflected as the total in Table 3 of the EMMP?
- A54. No. Dredge Area 12 is to be planted on 4 meter centers rather than 1 meter centers based on permit negotiations. It is not anticipated that this area will be successful, but for the City to obtain any credit if plants are established, the site was required to be planted. The 30 day PEP is shorter than the 120 day PEP standard within the City because plants that die in 30 days are generally attributable to stress during handling or poor planting unit preparation or planting methodology. However, plants that persist through 30 days but die out later are likely the result of inadequate site conditions. The Contractor is responsible for the PEP, but not long-term survival.
- Q55. Several locations are predicted to have low (<60%) success rates, and strong currents exist in Dredge Areas 5A and 6 with significant scour occurring. These sites may not achieve the 100% coverage and 85% density specified in the CEMP at 60 months; If the overall dredge footprint mitigation transplant achieves the 1.2:1 ratio of successful mitigation as per the CEMP, do all individual sites also have to meet the "success" criteria of the CEMP or will replanting efforts be required?
- A55. The Contractor is required to meet survival of unit requirements through the PEP only. The 60-Month Revegetation Maintenance and

Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.

Q56. The CEMP specifies percent coverage and density goals as a definition of success at specified intervals. If the transplant is accepted by the Engineer and meets the criteria for the Plant Establishment Period, is the contractor or the City responsible for costs associated with "revegetating (= re-transplant and extended monitoring)" if the transplant areas do not meet the CEMP goals at the specified monitoring periods?

A56. Following the Contractor's responsibility through the PEP, the success is the responsibility of the City. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.

Q57. Appendix K. The City requires eelgrass surveys over each CEMP required monitoring period going out to 60 months with an undefined, presumably incremental, payment schedule. Will the City require the Prime Contractor to be responsible for making these payments? What guarantees can the City provide the eelgrass contractor that these payments are made in the event the Prime Contractor goes out of business or otherwise does not compensate the eelgrass contractor for the extended monitoring program?

A57. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.

Q58. Section 1.03 Qualifications, Item A. Please confirm that a Contractor would be considered qualified to conduct the eelgrass collection, preparation of planting units, and transplanting if the assigned project manager for this portion of the work has a minimum of three (3) years of applicable on-the-job experience with leading at least three (3) successful large-scale (greater than 1 acre) eelgrass restoration plantings in California.

A58. The Contractor or Subcontractor company must meet the experience not just the project manager. The goal of the Qualification is to ensure that a company has the capacity and understanding to perform on the project. As

indicated in the Specifications, the transplant is the largest ever undertaken and the qualifications are intended to ensure that contractors have an understanding of the nature of the work to be performed and have corporate experience in performing this type of work.

- Q59. Section 1.03 Qualifications, Item A. Please confirm if a Contractor would be considered qualified to conduct the eelgrass collection, preparation of planting units, and transplanting if two or three of the assigned staff for this portion of the work each have three or more years of applicable on-the-job experience with, and by combining their experience, have led at least three (3) successful large-scale (greater than 1 acre) eelgrass restoration plantings in California.
- A59. The Contractor or Subcontractor company must meet the qualifications (see response above).
- Q60. Please confirm if the company that that prepared the Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project is eligible to bid as a Contractor or Subcontractor for the subject bid No. K-18-1576-DBB-3.
- A60. Merkel & Associates cannot bid on the restoration work or dredging.
- Q61. Please confirm (yes, no) if the City retained Project Biologist (or its company) is eligible to bid as a Contractor or Subcontractor for the subject bid No. K-18-1576-DBB-3.
- A61. Merkel & Associates cannot bid on the restoration work or dredging.
- Q62. Section 1.05 Inspections, A. 60-month Revegetation Maintenance and Monitoring Program. Please confirm (yes, no) if the monitoring is to be performed by the selected Contractor. If yes, please clarify the Part 4 Measurement and Payment terms for the 60-month eelgrass monitoring.
- A62. The 60-Month Revegetation Maintenance and Monitoring Agreement Appendix along with its associated Bid item will be deleted for this contract. See modifications to the Attachment E appendices in this Addendum.



Q63. Section 802-2.1 Project Biologist. Please clarify the monitoring responsibilities of the Project Biologist retained by the City versus that of the Contractor. Specifically is the City Project Biologist or the Contractor responsible for monitoring as may be required in compliance with the following MND elements:

Q63a. MND Section C. Biological Resources, 1. Biological Resource Protection During Construction, I. Prior to Construction;

A63a. The City's Project Biologist is responsible for this work.

Q63b. MND Section C. Biological Resources, 1. Biological Resource Protection During Construction, II. During Construction;

A63b. The City's Project Biologist is responsible for this work.

Q63c. MND Section C. Biological Resources, 1. Biological Resource Protection During Construction, III. Post Construction;

A63c. The City's Project Biologist is responsible for this work.

Q63d. MND Section C. Biological Resources, 3. Least Tern.

A63d. The City's Project Biologist is responsible for this work.

Q63e. MND Section C. Land Use Adjacency, H. Noise.

A63e. The City's Project Biologist is responsible for this work.

Q64. Please confirm if the selected Contractor (yes, no) will be responsible for the following monitoring and/or reporting requirements identified in Appendix F Biological Resource and Water Quality Letter Report:

Q64a. Page 22 of 45, Eelgrass Impact Analysis, pre- and post-dredging eelgrass surveys.

A64a. The City's Project Biologist is responsible for this work.

Q64b. Page 39 of 45, Regulatory Requirements for Proposed Project, Caulerpa surveys prior to bottom disturbing activities.

A64b. The City's Project Biologist is responsible for this work.

Q64c. Page 39 of 45, Regulatory Requirements for Proposed Project, EFH Assessment.

A64c. The City's Project Biologist is responsible for this work.

Q65. Is it possible to increase the length of the Contractor Water Staging Area to 1,200 ft.?

A65. The Contractor Staging Area cannot be increased as it has been the basis of permitting and environmental review to date.

Q66. Will contractor be responsible for mitigation of eelgrass that is adversely affected by a submerged pipeline contacting the sea floor?

A66. Yes.

Q67. Will contractor be responsible for mitigation of eelgrass that is adversely affected by anchors securing a floating pipeline?

A67. Yes.

Q68. Will contractor be responsible for mitigation of eelgrass that is adversely affected by cutter head dredge swing anchors and wires?

A68. Yes.

Q69. What ratio will be implemented for contractor affected eelgrass mitigation?

A69. 1.2:1 (Transplant to Impact)

Q70. Will blocking of navigation for both public and emergency vessels with floating pipelines be permitted within the bay? For example, a pipeline from dredge areas on sheet C-7 to reuse west will effectively cut the entire west bay in half, creating major navigational hindrances for public and emergency responders.

A70. Pipelines must be sunken pipes anchored to prevent floating between dredge and disposal areas.

Q71. Can floating pipelines remain anchored in place on Sundays, regardless of navigational issues they create?

A71. Pipelines are only allowed to be floated at the dredge and disposal site. These are to be marked and lighted for safety as directed by USCG and San Diego Lifeguards. The floating segments and submerged segments of the pipelines may remain in place during the dredge period as may all other dredge equipment. However, equipment not in use in an active dredging footprint must be stored in the designated areas at South Shores.

Q72. What specific safety measures will the City require to monitor the floating pipeline and maintain public safety?

A72. Each Contractor may propose a differing approach to the work. As such, it is not possible to outline precisely what requirements will be attached to the proposed work approach. The Contractor shall propose their work plan and measures to ensure safety of the public. These shall be reviewed and approved by the City Lifeguard Services and the City Field Division.

Q73. POST-PLANT: Question: If 20% of the transplants fail after a second re-plant, how many re-plants are required before the area is considered unsuitable?

A73. If a replant is required to be performed the City's Project Biologist will closely monitor the supplemental transplant efforts of the Contractor to confirm that handling of the plants is appropriate to reasonably expect establishment success. If the Contractor exhibits due care in the replanting, and plants fail, the Contractor will not be required to conduct supplemental transplanting within the same transplant location for a third transplant cycle.

#### C. NOTICE INVITING BIDS

1. To Section 3, Estimated Construction Costs, page 4, **DELETE** in its entirety and **SUBSTITUTE** with the following:

3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$9,010,000.**

2. To Section 12, Supplemental Agreements, and Section 13, Partial Release of Performance Bond and Labor and Materialmen's Bond, page 6, **DELETE** in their entirety.

#### D. ATTACHMENTS:

1. To Attachment A, Scope of Work, page 21, Section 2, Estimated Construction Costs, **DELETE** in its entirety and **SUBSTITUTE** with the following:

2. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$9,010,000.**

2. To Attachment A, Scope of Work, page 21, Section 4, Contract Time, Sub-section 4.3, **DELETE** in its entirety and **SUBSTITUTE** with the following:

**4.3.** The planting of eelgrass shall be completed within **169 Working Days** inclusive of the **30 Calendar Day** Plant Establishment Period. Eelgrass planting is best completed during the active growing season: March 1 – October 31. If the City determines that winter eelgrass dormancy did not occur or plants emerge from a low growth period earlier in the year, work periods may be extended on the earlier end of the season.

2. To Attachment G, Contract Agreement, pages 336 through 337, **DELETE** in their entirety and **SUBSTITUTE** with pages 72 through 73 of this Addendum.

## **E. SUPPLEMENTARY SPECIAL PROVISIONS**

1. To Attachment E, Supplementary Special Provisions, page 29, Section 1, Terms, Definitions, Abbreviations, Units of Measure, and Symbols, Section 1-2, Terms and Definitions, Planting, **DELETE** in its entirety and **SUBSTITUTE** with the following:

Planting:

The Normal Working Hours for Planting are from 7:00 AM to 7:00 PM, Monday through Friday. Prior to Memorial Day weekend, Saturday may be used as a planting day as well. After Memorial Day, weekend work shall not be authorized.

2. To Attachment E, Supplementary Special Provisions, Section 7, Responsibilities of the Contractor, pages 41 through 42, Sub-section 7-5, Permits, Fees, and Notices, **DELETE** in its entirety and **SUBSTITUTE** with the following:

**7-5 PERMITS, FEES, AND NOTICES.** To the "WHITEBOOK", ADD the following:

2. The following documents are provided for Contractors use in determining limitations derived or anticipated to be derived from agency permits:
  - a) California Regional Water Quality Control Board - Clean Water Act Section 401 Certification

- b) City of San Diego Site Development Permit No. 1928412
3. The Contractor shall comply with conditions and requirements of the Corps of Engineers Permit, Coastal Development Permit, Regional Water Quality Control Board Certification, and other State, Park, City and Federal permits as provided by the City. The City will secure the permits for dredging and disposal of material as indicated. The permits are provided in this Addendum A (see pages 24 through 71). Ingress/egress and land and water public safety requirements are of particular interest for this project. Air quality permits shall be obtained by the Contractor. USCG Local Notice to Mariners and any USCG or City Lifeguard Services day marker, reflector, or lighting requirements for marine equipment is the responsibility of the Contractor.
  4. Contractor is responsible for obtaining traffic control permit, APCD permit, and any regulatory fees associated with the use of equipment.
  5. Contractor is responsible for obtaining Scientific Collector's Permit and Letter of Authorization to transplant eelgrass from the California Department of Fish & Wildlife. At no additional cost to City, the Contractor shall be responsible to comply with any conditions placed on the work under these authorizations.
  6. Contractor shall be responsible for compliance with construction period permit limitations in accordance with state and federal permits and approvals. Monitoring for compliance will be accomplished by City and its representatives.
3. To Attachment E, Supplementary Special Provisions, Appendices, pages 322 through 334, Appendix K, Long-Term Re-vegetation Maintenance Agreement, **DELETE** in its entirety.

**F. ADDITIONAL CHANGES**

1. The following are additional changes to the Line Items in the PlanetBids Tab:

For clarity where applicable, **ADDITIONS**, if any, have been **Underlined** and **DELETIONS**, if any, have been **~~Stricken out.~~**

Section	Item Code	Description	UoM	Quantity	Payment Reference	UnitPrice
Main Bid	541330	<del>60-Month Revegetation Maintenance and Monitoring Agreement</del>	LS	1	802-5	

James Nagelvoort, Director  
Public Works Department

Dated: *August 31, 2017*  
San Diego, California

JN/RWB/egz



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## San Diego Regional Water Quality Control Board

August 23, 2017

**Certified Mail – Return Receipt Requested**  
Article Number: 7011 0470 0002 8952 6680

Mr. James Arnhart  
City of San Diego Public Works  
525 B Street, Suite 750  
San Diego, CA 92101

**In reply/refer to:**  
R9-2017-0036:832167:amonji

**Subject: Clean Water Act Section 401 Water Quality Certification No. R9-2017-0036  
Mission Bay Navigational Safety Dredging Project**

Mr. Arnhart:

Enclosed find Clean Water Act Section 401 Water Quality Certification No. R9-2017-0036 (Certification) issued by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board ) in response to the application submitted by the City of San Diego for the **Mission Bay Navigational Safety Dredging Project** (Project). A description of the Project and Project location can be found in the Certification and site maps which are included as attachments to the Certification.

The City of San Diego is enrolled under State Water Resources Control Board Order No. 2003-017-DWQ as a condition of the Certification and is required to implement and comply with all terms and conditions of the Certification in order to ensure that water quality standards are met for the protection of wetlands and other aquatic resources. Failure to comply with this Certification may subject the City of San Diego to enforcement actions by the San Diego Water Board including administrative enforcement orders requiring the City of San Diego to cease and desist from violations or to clean up waste and abate existing or threatened conditions of pollution or nuisance; administrative civil liability in amounts of up to \$10,000 per day per violation; referral to the State Attorney General for injunctive relief; and, referral to the District Attorney for criminal prosecution.

Please submit all reports and information required under this Certification in electronic format via e-mail to [SanDiego@waterboards.ca.gov](mailto:SanDiego@waterboards.ca.gov). Documents over 50 megabytes will not be accepted via e-mail and must be placed on a disc and delivered to the San Diego Water Board, 2375 Northside Drive, San Diego, CA 92108. Each electronic document must be submitted as a single file, in Portable Document Format (PDF), and converted to text searchable format using Optical Character Recognition (OCR). All electronic documents must include scanned copies of all signature pages; electronic signatures will not be accepted. Electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2017-0036:832167:amonji.

HENRY ABARBANEL, PH.D., CHAIR | DAVID GIBSON, EXECUTIVE OFFICER

2375 Northside Drive, Suite 100, San Diego, California 92108-2700 | [www.waterboards.ca.gov/sandiego](http://www.waterboards.ca.gov/sandiego)

August 31, 2017  
Mission Bay Navigational Safety Dredging

ADDENDUM A

Page 24 of 73



August 23, 2017

For questions or comments regarding the Certification, please contact Alan Monji by telephone at (619) 521-3968 or by email at [Alan.Monji@waterboards.ca.gov](mailto:Alan.Monji@waterboards.ca.gov).

Respectfully,



DAVID W. GIBSON  
Executive Officer

Enclosure:

Clean Water Act Section 401 Water Quality Certification No. R9-2017-0036 for the **Mission Bay Navigational Safety Dredging Project**

DWG;js:db:eb:atm

cc:

Mr. Keith Merkel  
Merkel and Associates  
[kmerkel@merkelinc.com](mailto:kmerkel@merkelinc.com)

Mr. Kevin Hupf  
California Department of Fish and Wildlife  
[Kevin.Hupf@wildlife.ca.gov](mailto:Kevin.Hupf@wildlife.ca.gov)

Ms. Melissa Scianni  
U.S. EPA, OWOW, Region 9  
[Scianni.melissa@epa.gov](mailto:Scianni.melissa@epa.gov)

State Water Resources Control Board, Division of Water Quality  
401 Water Quality Certification and Wetlands Unit  
[Stateboard401@waterboards.ca.gov](mailto:Stateboard401@waterboards.ca.gov)

Mr. Eric Becker  
San Diego Water Board  
[Eric.Becker@waterboards.ca.gov](mailto:Eric.Becker@waterboards.ca.gov)

Mr. David Barker  
San Diego Water Board  
[David.Barker@waterboards.ca.gov](mailto:David.Barker@waterboards.ca.gov)



City of San Diego  
Mission Bay Navigational Dredging  
R9-2017-0036

- 3 -

August 23, 2017

Mr. Robert Smith  
US Army Corps of Engineers  
Robert.r.smith@usace.army.mil

Tech Staff Information	
Certification No.	R9-2017-0036
Party ID	528888
Reg. Meas. ID	411607
Place ID	832167
Person ID	562240
WDID	9 000003134



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

2375 Northside Drive, Suite 100, San Diego, CA 92108  
Phone (619) 516-1990 • Fax (619) 516-1994  
<http://www.waterboards.ca.gov/sandiego/>

Clean Water Act Section 401 Water Quality Certification  
and Waste Discharge Requirements  
for Discharge of Dredged and/or Fill Materials

**PROJECT: Mission Bay Navigational Safety Dredge  
Certification Number R9-2017-0036  
WDID: 9000003134**

Reg. Meas. ID: 411607 Place ID: 832167 Party ID: 528888 Person ID: 562240
--

**APPLICANT: City of San Diego  
525 B Street Suite 750  
San Diego, CA 92101**

**ACTION:**

<input type="checkbox"/> Order for Low Impact Certification	<input type="checkbox"/> Order for Denial of Certification
<input checked="" type="checkbox"/> Order for Technically-conditioned Certification	<input type="checkbox"/> Enrollment in Isolated Waters Order No. 2004-004-DWQ
<input checked="" type="checkbox"/> Enrollment in SWRCB GWDR Order No. 2003-017-DWQ	

**PROJECT DESCRIPTION**

An application dated January 26, 2017 was submitted by the City of San Diego (hereinafter Applicant), for Water Quality Certification pursuant to section 401 of the Clean Water Act (United States Code (USC) Title 33, section 1341) for the proposed Mission Bay Navigational Safety Dredge Project (Project). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) deemed the application to be complete on April 13, 2017. The Applicant proposes to discharge dredged or fill material to waters of the United States and/or State associated with construction activity at the Project site. The Applicant has also applied for a Clean Water Act section 404 permit from the United States Army Corps of Engineers for the Project (USACE File No. SPL-2017-00074-RRS).

The Project is located within the City of San Diego, San Diego County, California at Mission Bay. The Project center reading is located at latitude 32.77899 and longitude -117.23252. The Applicant has paid all required application fees for this Certification in the amount of \$55,654.00. On an annual basis, the Applicant must also pay all active discharge fees and post discharge monitoring fees in accordance with the fee schedule set forth in California Code of Regulations (CCR) title 23, division 3, chapter 9 (commencing with section 2200,<sup>1</sup>). On April 14, 2017, the San Diego Water Board provided public notice of the Project application pursuant to CCR, title 23, division 3, chapter 28, section 3858 by posting

<sup>1</sup>The fee regulations can be accessed on line at [http://www.waterboards.ca.gov/resources/fees/docs/fy1617\\_fee\\_schedule.pdf](http://www.waterboards.ca.gov/resources/fees/docs/fy1617_fee_schedule.pdf)

The fee regulations can be accessed on-line at: [http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/dredgefillcalculator.xlsx](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredgefillcalculator.xlsx)

information describing the Project on the San Diego Water Board's web site and providing a period of twenty-one days for public review and comment. No comments were received.

The Applicant proposes to conduct maintenance dredging to remove shoals that are causing navigational hazards within Mission Bay Park and sand placement on shoreline areas of Mission Bay to restore eroded shoreline sections. The City of San Diego has an active beach maintenance program within Mission Bay Park. Maintenance activities include beach grooming, sand management, trash and debris removal, and fire ring cleaning. Most of the sand management activities are beach grooming and raking along the upper portion of the bay shoreline. These activities do not address the sand that migrates below the high tide line or sediment that is transported within Mission Bay to areas that form shallow water shoals.

Within Mission Bay over 1,000 acres out of approximately 2,300 acres of bay waters has experienced sediment shoaling when compared against the construction of Mission Bay in 1961 and the last bathymetric survey in 2013. Approximately six percent (60 acres) of the shoaling areas in Mission Bay have developed in areas that conflict with existing boat and jet ski speed zones, vessel traffic, and vessel draft. These areas have been deemed a navigation hazard for these activities.

The maintenance dredging proposed under this Project will remove shoals that have developed since original bay development in 1961. There are 14 identified maintenance dredge areas identified in the plans as Dredge Areas 1 through 15, excluding Dredge Area 8. A small area identified as Dredge Area 5B is also excluded. Areas not considered a navigation hazard and/or constructed shallow areas are also excluded from this Project.

In conjunction with the proposed maintenance dredging, seven sediment Reuse Areas have been identified in Mission Bay and along the shoreline of Mission Bay Park. The Reuse Areas include partial filling of four borrow pits in northern Sail Bay, raising the elevation of the Leisure Lagoon floor in the eastern part of Mission Bay to improve tidal flushing, and beach sand re-nourishment along Crown Point Shores and northeast Vacation Island shorelines.

The Project maintenance dredging and sand replenishment activities will not convert any acres of pervious ground cover to impervious surfaces. The Project is expected to result in short-term temporary increases in local turbidity levels during dredging and material placement but these impacts will be mitigated by incorporation of water quality monitoring and turbidity elevation limits in this Certification, requiring the Applicant to reduce turbidity generation if elevation exceeds acceptable thresholds.

Compliance with the Certification conditions will help ensure that construction and post-construction discharges from the Project will not cause on-site or off-site shoreline or bluff erosion, damage to shoreline properties, or otherwise damage shoreline habitats in violation of water quality standards in the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan) or the *Water Quality Control Plan, Ocean Waters of California* (Ocean Plan).

Permanent impacts will not be known until the pre and post construction eelgrass survey is completed and compared in accordance with the *California Eelgrass Mitigation Policy* (CEMP), October 2014. The Project is predicted to permanently impact up to 42.93 acres of eelgrass habitat from maintenance dredging activities based on the last bay-wide eelgrass survey

conducted in 2013. The Applicant reports that the Project purpose cannot be practically accomplished in a manner that would avoid or result in less adverse impacts to aquatic resources considering all potential practicable alternatives, such as the potential for alternate available locations, designs, reductions in size, configuration or density.

Project construction will permanently impact 82.9 acres (6,070 linear feet) of open bay and shoreline waters of the United States and/or State. The Project includes the dredging of between 122,220 and 220,850 cubic yards (cy) of sediment material within approximately 63.4 acres of bay waters (42.9 acres of eelgrass beds and 20.4 acres of open water) and 19.5 acres of dredged sediment reuse areas. Approximately 9,615 cy of dredged material will be placed in Leisure Lagoon and approximately 83,223 cy of dredged material will be used for sand nourishment or in-bay reuse. The dredged material will be fully reused in the development of eelgrass mitigation areas and for the shoreline repairs in the three Reuse Areas. The filling of Reuse Areas to achieve an optimal depth for eelgrass restoration is not proposed to impact existing eelgrass and will be adjusted spatially as necessary to ensure minimization of impacts. When possible, eelgrass needed for the restoration plantings will be harvested out of the dredge area footprint and along the perimeter of the dredge cuts. This will minimize the need to harvest eelgrass from donor beds outside of the designated dredge areas.

Mitigation for discharges of fill material to waters of the United States and/or State will be completed by the Applicant at Mission Bay, CA located in the Scripps hydrologic sub-area (HSA 906.30) at a minimum planting area ratio of 1.38:1 (area planted:eelgrass area impacted) for the maintenance dredge areas and 1.72:1 for the Borrow Pit areas. The final successful establishment mitigation ratio will be at least 1:1.2 which is consistent with the CEMP. The Applicant has the option of using banked Mission Bay Park eelgrass mitigation credits to offset mitigation shortfalls; however proposed on-site restoration is preferred over the use of mitigation credits. Mitigation credit use will be subject to approval by the signatory agencies (National Marine Fisheries Service and U.S. Fish and Wildlife Service) and use of mitigation credits will be applied at a 1:1 ratio.

Detailed written specifications and work descriptions for the compensatory mitigation project including, but not limited to, the geographic boundaries of the project, timing, sequence, monitoring, maintenance, ecological success performance standards and provisions for long-term management and protection of the mitigation areas are described in the *Eelgrass Mitigation and Monitoring Plan in Support of the Mission Bay Park Navigational Safety Dredging Project* (Mitigation Plan), dated December 2016. San Diego Water Board acceptance of the Mitigation Plan applies only to the Project described in this Certification and must not be construed as approval for other current or future projects that are planning to use additional acreage at the site for mitigation. The Mitigation Plan is incorporated in this Certification by reference as if set forth herein. The Mitigation Plan provides for implementation of compensatory mitigation which offsets adverse water quality impacts attributed to the Project in a manner that protects and restores the abundance, types and conditions of aquatic resources and supports their beneficial uses. Implementation of the Mitigation Plan will reduce significant environmental impacts to resources within the San Diego Water Board's purview to a less than significant level. Based on all of these considerations, the Mitigation Plan will adequately compensate for the loss of beneficial uses and habitat within waters of the United States and/or State attributable to the Project.

Additional Project details are provided in Attachments 1 through 5 of this Certification.

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### Attachments:

1. Definitions
2. Project Location Maps
3. Project Site Plans
4. Mitigation Figures and Ledgers
5. CEQA Mitigation Monitoring and Reporting Program

## I. STANDARD CONDITIONS

Pursuant to section 3860 of title 23 of the California Code of Regulations, the following three standard conditions apply to all water quality certification actions:

- A. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the Water Code and chapter 28, article 6 (commencing with title 23, section 3867), of the California Code of Regulations.
- B. This Certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Certification application was filed pursuant to California Code of Regulations title 23, section 3855 subdivision (b), and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
- C. This Certification action is conditioned upon total payment of any fee required under title 23, chapter 28 (commencing with section 3830) of California Code of Regulations and owed by the applicant.

## II. GENERAL CONDITIONS

- A. **Term of Certification.** Water Quality Certification No. R9-2017-0036 (Certification) shall expire upon a) the expiration or retraction of the Clean Water Act section 404 (33 USC Title 33, section 1344) permit issued by the U.S. Army Corps of Engineers for this Project, or b) five (5) years from the date of issuance of this Certification, whichever occurs first.
- B. **Duty to Comply.** The Applicant must comply with all conditions and requirements of this Certification. Any Certification noncompliance constitutes a violation of the Water Code and is grounds for enforcement action or Certification termination, revocation and reissuance, or modification.
- C. **General Waste Discharge Requirements.** The requirements of this Certification are enforceable through Water Quality Order No. 2003-0017-DWQ, *Statewide General Waste Discharge Requirements for Discharges of Dredged or Fill Material that have Received State Water Quality Certification* (Water Quality Order No. 2003-0017-DWQ). This provision shall apply irrespective of whether a) the federal permit for which the Certification was obtained is subsequently retracted or is expired, or b) the Certification is expired. Water Quality Order No. 2003-0017-DWQ is accessible at:

[http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/generalorders/gowdr401regulated\\_projects.pdf](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/gowdr401regulated_projects.pdf).

- D. **Project Conformance with Application.** All water quality protection measures and BMPs described in the application and supplemental information for water quality certification are incorporated by reference into this Certification as if fully stated herein.



Notwithstanding any more specific conditions in this Certification, the Applicant shall construct, implement and comply with all water quality protection measures and BMPs described in the application and supplemental information. The conditions within this Certification shall supersede conflicting provisions within the application and supplemental information submitted as part of this Certification action.

- E. Project Conformance with Water Quality Control Plans or Policies.** Notwithstanding any more specific conditions in this Certification, the Project shall be constructed in a manner consistent with the Water Quality Control Plan for the San Diego Basin (Basin Plan), the California Ocean Plan, and any other applicable water quality control plans or policies adopted or approved pursuant to the Porter Cologne Water Quality Act (Division 7, commencing with Water Code Section 13000) or section 303 of the Clean Water Act (33 USC section 1313). The Basin Plan and Ocean Plan are accessible at:

Basin Plan

[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml)

- F. Project Modification.** The Applicant must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this Certification, to the San Diego Water Board for prior review and written approval. If the San Diego Water Board is not notified of a significant change to the Project, it will be considered a violation of this Certification.
- G. Certification Distribution Posting.** During Project construction, the Applicant must maintain a copy of this Certification at the Project site. This Certification must be available at all times to site personnel and agencies. A copy of this Certification shall also be provided to any contractor or subcontractor performing construction work, and the copy shall remain in their possession at the Project site.
- H. Inspection and Entry.** The Applicant must allow the San Diego Water Board or the State Water Resources Control Board, and/or their authorized representative(s) (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents as may be required under law, to:
1. Enter upon the Project or Compensatory Mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Certification;
  2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Certification;
  3. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Certification; and
  4. Sample or monitor, at reasonable times, for the purposes of assuring Certification compliance, or as otherwise authorized by the Clean Water Act or Water Code, any substances or parameters at any location.

- I. **Enforcement Notification.** In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under State law. For purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Certification.
- J. **Certification Actions.** This Certification may be modified, revoked and reissued, or terminated for cause including but not limited to the following:
1. Violation of any term or condition of this Certification;
  2. Monitoring results indicate that continued Project activities could violate water quality objectives or impair the beneficial uses of Mission Bay or the Pacific Ocean;
  3. Obtaining this Certification by misrepresentation or failure to disclose fully all relevant facts;
  4. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
  5. Incorporation of any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

The filing of a request by the Applicant for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Certification condition.

- K. **Duty to Provide Information.** The Applicant shall furnish to the San Diego Water Board, within a reasonable time, any information that the San Diego Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Certification or to determine compliance with this Certification.
- L. **Property Rights.** This Certification does not convey any property rights of any sort, or any exclusive privilege.
- M. **Petitions.** Any person aggrieved by this action of the San Diego Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with the California Code of Regulations, title 23, sections 3867 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Certification. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:  
[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

### III. CONSTRUCTION BEST MANAGEMENT PRACTICES

- A. **Approvals to Commence Construction.** The Applicant shall not commence Project construction until all necessary federal, State, and local approvals are obtained.
- B. **Personnel Education.** Prior to the start of the Project, and annually thereafter, the Applicant must educate all personnel on the requirements in this Certification, pollution prevention measures, spill response measures, and BMP implementation and maintenance measures.
- C. **Spill Containment Materials.** The Applicant must, at all times, maintain appropriate types and sufficient quantities of materials on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the United States and/or State.
- D. **General Construction Storm Water Permit.** Prior to start of Project construction, the Applicant must, as applicable, obtain coverage under, and comply with, the requirements of State Water Resources Control Board Water Quality Order No. 2009-0009-DWQ, NPDES No. CAS000002, the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity*, (General Construction Storm Water Permit) and any reissuance. If Project construction activities do not require coverage under the General Construction Storm Water Permit, the Applicant must develop and implement a runoff management plan (or equivalent construction BMP plan) to prevent the discharge of sediment and other pollutants during construction activities.
- E. **Waste Management.** The Applicant must properly manage, store, treat, and dispose of wastes in accordance with applicable federal, state, and local laws and regulations. Waste management shall be implemented to avoid or minimize exposure of wastes to precipitation or storm water runoff. The storage, handling, treatment, or disposal of waste shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050. Upon Project completion, all Project generated debris, building materials, excess material, waste, and trash shall be removed from the Project site(s) for disposal at an authorized landfill or other disposal site in compliance with federal, state and local laws and regulations.
- F. **Construction Equipment.** All equipment must be washed prior to transport to the Project site and must be free of sediment, debris, and foreign matter. All equipment used in direct contact with surface water shall be steam cleaned prior to use. All equipment using gas, oil, hydraulic fluid, or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (e.g., motors, pumps, generator, etc.) shall be positioned over drip pans or other types of containment.
- G. **Process Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the United States and/or State or placed in locations that may be subjected to storm water runoff flows.

- H. **Hazardous Materials.** Except as authorized by this Certification, substances hazardous to aquatic life including, but not limited to, petroleum products, unused cement/concrete, asphalt, and coating materials, must be prevented from contaminating the soil and/or entering waters of the United States and/or State. BMPs must be implemented to prevent such discharges during each Project activity involving hazardous materials.
- I. **Limits of Disturbance.** The Applicant shall clearly define the limits of Project disturbance to waters of the United States and/or State using a combination of 1) highly visible markers such as flag markers or construction fencing in beach areas and 2) verified GPS based navigation plotters or corner buoys in submerged work areas. The contractor's equipment suitability for defining work limits in submerged areas must be verified by the Applicant prior to commencement of Project construction activities within those areas.
- J. **Dredge Volume Limit.** The volume of sediment dredged in Mission Bay must not exceed 220,850 cubic yards of sediment.
- K. **Sediment Dredging.** The Applicant shall conduct dredging in accordance with, but not limited to, the following best management practices:
1. Dredging must be conducted to remove dredge material and not stockpile material on the floor of Mission Bay.
  2. The drop height from a clamshell bucket or from the hydraulic cutter head suction dredge discharge pipe onto the scow must be controlled to prevent splashing or sloshing of dredged material back into Mission Bay waters.
  3. The swing radius of unloading equipment must be controlled to prevent spillage of dredged sediments back into the water.
  4. Dredged material scows must not be filled to a point that overflow or spillage could occur. Each material scow must be marked in such a way to allow the operator to visually identify the maximum load point.
  5. Load-controlled boat movement, line attachment, and/or horsepower requirements of tugs and support boats at the Project site must be specified to avoid resuspension of sediment. Such measures may include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.
- L. **Placement of Dredge Material Suitable for Beneficial Reuse.** The Applicant shall place dredged material determined by the USACE and USEPA to be suitable for beneficial reuse at the designated areas in Mission Bay in accordance with the following additional requirements to ensure protection of sensitive resources and water quality outside of the active placement sites:
1. Sediment shall be transported to the Reuse Areas in a way that minimizes the discharge of material.

2. Visual monitoring of sediment movement and turbidity levels shall be performed by the Applicant during and after sediment placement in accordance with Section VI.J of this Certification.
- M. On-site Qualified Biologist.** The Applicant shall designate an on-site qualified biologist to monitor Project construction activities within or adjacent to waters of the United States and/or State to ensure compliance with the Certification requirements. The biologist shall be given the authority to stop all work on-site if a violation of this Certification occurs or has the potential to occur. Records and field notes of the biologist's activities shall be kept on-site and made available for review upon request by the San Diego Water Board.
- N. Protection of Eelgrass Beds at the Mission Bay Navigational Safety Dredge Project Sites.** A pre-construction eelgrass survey must be completed in accordance with the requirements of the *California Eelgrass Mitigation Policy (CEMP)*<sup>2</sup> by a qualified biologist, prior to initiation of construction activities at the site. The Applicant shall also comply with the following requirements:
1. Prior to construction, the boundaries of adjacent eelgrass beds must be defined and transmitted to the dredge contractor for upload into the contractor's navigation and dredge control software and shall be displayed on video plotters of the dredging work areas.
  2. When silt curtains are deployed, they must be positioned and anchored in place in a manner suitable to prevent eelgrass bed damage from curtain drag or movement.
- O. Beneficial Use Protection.** The Applicant must take all necessary measures to protect the beneficial uses of waters of Mission Bay. This Certification requires compliance with all applicable requirements of the Basin Plan. If at any time, an unauthorized discharge to surface waters occurs or monitoring indicates that the Project is violating, or threatens to violate, water quality objectives, the associated Project activities shall cease immediately and the San Diego Water Board shall be notified in accordance with Notification Requirement VII.A of this Certification. Associated Project activities may not resume without approval from the San Diego Water Board.
- P. Trash and Debris.** The dredged material deposited in the Reuse Areas must be free of trash and debris.
- Q. Sand Composition.** The dredged material used for shoreline beach nourishment must have at least 80 percent sand and no more than 10 percent difference in sand composition from the receiving beach, and must not have a significant chemical contamination. The Project must not impact the aesthetic characteristics of the receiving beaches and/or adjacent ocean waters.

<sup>2</sup> National Oceanic and Atmospheric Administration, National Marine Fisheries, West Coast Region. California Eelgrass Mitigation Policy and Implementing Guidelines, October 2014. An electronic copy can be found at the following web page: [http://www.westcoast.fisheries.noaa.gov/publications/habitat/california\\_eelgrass\\_mitigation/Final%20CEMP%20October%202014/cemp\\_oct\\_2014\\_final.pdf](http://www.westcoast.fisheries.noaa.gov/publications/habitat/california_eelgrass_mitigation/Final%20CEMP%20October%202014/cemp_oct_2014_final.pdf)

#### IV. POST-CONSTRUCTION BEST MANAGEMENT PRACTICES

- A. **Post-Construction Discharges.** The Applicant shall not allow post-construction discharges from the Project site to cause or contribute to on-site or off-site erosion or damage to properties.

#### V. PROJECT IMPACTS AND COMPENSATORY MITIGATION

- A. **Project Impact Avoidance and Minimization.** The Project must avoid and minimize adverse impacts to waters of the United States and/or State to the maximum extent practicable.
- B. **Project Impacts and Compensatory Mitigation.** Unavoidable Project impacts to Mission Bay and/or Pacific Ocean must not exceed the type and magnitude of impacts described in the table below. At a minimum, compensatory mitigation required to offset unavoidable temporary and permanent Project impacts to waters of the United States and/or State must be achieved as described in the table below:

	Impacts (acres)	Impacts (linear ft.)	Mitigation for Impacts (acres)	Mitigation Ratio (area mitigated : area impacted)	Mitigation for Impacts (linear ft.)	Mitigation Ratio (linear feet mitigated : linear feet impacted)
<b>Permanent Impacts</b>						
Mission Bay	42.9 Eelgrass beds 20.4 Open Water 19.5 Dredge Reuse  Total 82.9 <sup>1,2</sup>	6,070	51.52 Establishment and Re-Establishment <sup>3,4</sup>	1.2:1 <sup>4</sup>	NA	NA

1. Total dredge area is 63.4 acres, with 19.5 acres of constructed eelgrass restoration and dredge Reuse Areas.
2. Estimated impacts to eelgrass is 42.93 acres. Pre-construction surveys will confirm actual Project impacts to eelgrass beds. The final mitigation will be based on the application of mitigation ratios to the difference in eelgrass area between pre- and post-dredge surveys.
3. The impacts associated with dredging of unvegetated bay bottom areas of Mission Bay will include temporary and localized increases in suspended sediment (i.e., turbidity) along with a potential for reduced dissolved oxygen levels associated with disturbance of anoxic sediment compounds. The Project will have temporary effects on marine life of varying degrees. Mobile aquatic organisms will most likely vacate the area of disturbance during the duration of the Project. The disturbed sediment areas should be able to recover from the impacts since each Dredge Area will be surrounded by existing eelgrass beds and undisturbed bay bottom areas which will act as a source for benthic organisms and supplement the eelgrass restoration. Furthermore, the Project proposes complete reuse of the dredged sediment. Any invertebrates surviving the dredge and transport of sediment will be the initial benthic colonizers in the designated dredge Reuse areas and additional recolonization of these areas will occur rapidly through natural recruitment and larval colonization. Based on all of these considerations, compensatory mitigation for the above-described impacts to unvegetated bay bottom is not required.
4. Initial minimum planting ratios will be 1.38:1 for impacts to eelgrass and 1.72:1 for the fill placed in the Borrow Pits located in north Sail Bay with an overall final successful eelgrass planting ratio of 1.2:1 which is consistent with CEMP.

**C. Eelgrass.** A pre-dredging eelgrass survey must be completed in accordance with the requirements of the CEMP by a qualified biologist, prior to initiation of dredging activities at the site. This survey must include both aerial and density characterization of the beds. If eelgrass is found during the pre-dredging survey, a post-dredging survey must be performed by a qualified biologist within 30 days following project completion to quantify any unanticipated losses to eelgrass habitat. Impacts must then be determined from a comparison of pre- and post-dredging survey results. Impacts to eelgrass must be mitigated in conformance with the CEMP, which defines the mitigation ratio and other requirements to achieve mitigation for significant eelgrass impacts. If required following the post-dredging survey, the CEMP defined mitigation plan must be developed; submitted and approved by the San Diego Water Board, USACE, and National Marine Fisheries Service; and implemented to offset losses to eelgrass.

**D. Compensatory Mitigation Site Design.** The compensatory mitigation site(s) shall be designed to be self-sustaining once performance standards have been achieved. This

includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context support long-term sustainability.

- E. Temporary Project Impact Areas.** The Applicant must restore all areas of temporary impacts and all other areas of temporary disturbance which could result in a discharge or a threatened discharge of pollutants to waters of the United States and/or State. Restoration must include grading of disturbed areas to pre-project contours and re-vegetation with native species. The Applicant must implement all necessary BMPs to control erosion and runoff from areas associated with the Project.
- F. Eelgrass Mitigation Credits.** The Applicant has established the Mission Bay Park Mitigation Bank with banked credits for impacts to eelgrass in Mission Bay. The eelgrass bank locations are at South Shores Embayment, Ventura Cove, East Ski Island, and Stribley Marsh Reserve. The Applicant may use eelgrass credits if the restoration is short of the required mitigation acreage. The use of credits from this bank is subject to signatory agency approval. A ledger of mitigation credits used and available credits shall be provided to the San Diego Water Board documenting use from the Mission Bay Park Mitigation Bank.
- G. Long-Term Management and Maintenance.** The compensatory mitigation site(s) must be managed, protected, and maintained, in perpetuity, in conformance with the long-term management plan and the final ecological success performance standards identified in the Mitigation Plan. The aquatic habitats that comprise the mitigation site(s) must be protected in perpetuity from land-use and/or maintenance activities that may threaten water quality or beneficial uses within the mitigation area(s) in a manner consistent with the following requirements:
1. Any maintenance activities on the mitigation site(s) that do not contribute to the success of the mitigation site(s) and enhancement of beneficial uses and ecological functions and services are prohibited;
  2. Maintenance activities must be limited to the removal of trash and debris, removal of exotic plant species, and remedial measures deemed necessary for the success of the compensatory mitigation project; and
  3. If at any time a catastrophic natural event causes damage(s) to the mitigation site(s) or other deficiencies in the compensatory mitigation project, the Applicant must take prompt and appropriate action to repair the damage(s) including replanting the affected area(s) and address any other deficiencies. The San Diego Water Board may require additional monitoring by the Applicant to assess how the compensatory mitigation site(s) or project is responding to a catastrophic natural event.
- H. Timing of Mitigation Site Construction.** The construction of proposed mitigation must be completed no later than 9 months following the earliest time of either the direct impact to eelgrass beds or as directed in accordance with CEMP. Delays in implementing mitigation must be compensated for by an increased mitigation implementation of 10% of the cumulative compensatory mitigation for each month of delay.



- I. **Mitigation Site(s) Preservation Mechanism.** If compensatory mitigation for eelgrass impacts is required, the Applicant must provide the San Diego Water Board with a draft preservation mechanism (e.g. deed restriction, conservation easement, etc.) **within 90 days from the dredging completion date** that will protect all mitigation areas and their buffers in perpetuity. The Applicant must submit proof of a completed final preservation mechanism that will protect all mitigation areas and their buffers in perpetuity before the Project certification can be terminated. The conservation easement, deed restriction, or other legal limitation on the mitigation properties must be adequate to demonstrate that the sites will be maintained without future development or encroachment on the sites which could otherwise reduce the functions and values of the sites for the variety of beneficial uses of waters of the United States and/ or State that it supports. The legal limitation must prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the functions and values of the sites.

## VI. MONITORING AND REPORTING REQUIREMENTS

- A. **Representative Monitoring.** Samples and measurements taken for the purpose of monitoring under this Certification shall be representative of the monitored activity.
- B. **USEPA Test Procedures.** Monitoring must be conducted according to USEPA test procedures approved under Title 40, Code of Federal Regulations (CFR), Part 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act* as amended, unless other test procedures have been specified in this Certification.
- C. **Monitoring Instruments.** All monitoring instruments and devices, which are used by the Applicant to fulfill the prescribed monitoring program, must be properly maintained and calibrated as necessary to ensure their continued accuracy.
- D. **Certified Laboratory.** All laboratory analyses must be performed in a laboratory certified to perform such analyses under the State Water Resources Control Board's Environmental Laboratory Accreditation Program or a laboratory approved by the San Diego Water Board.
- E. **Monitoring Reports.** Monitoring results shall be reported to the San Diego Water Board at the intervals specified in section VI of this Certification.
- F. **Monitoring and Reporting Revisions.** The San Diego Water Board may make revisions to the monitoring program at any time during the term of this Certification and may reduce or increase the number of parameters to be monitored, locations monitored, the frequency of monitoring, or the number and size of samples collected.
- G. **Retain Records.** The Applicant must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Certification, and records of all data used to complete the application for this Certification. Records must be maintained for a minimum of five years from the date of

the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this Project or when requested by the San Diego Water Board.

**H. Records of Monitoring Information.** Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

**I. Dredged Material Evaluation.** Dredged material proposed for discharge must be sampled, tested and evaluated according to the document entitled "1996 Evaluation of Dredge Materials Proposed for Discharge in Waters of the U.S. – Testing Manual" (Inland Testing Manual) under the direction and approval of USACE and USEPA.

**J. Receiving Water Visual Observation Monitoring.** The Applicant must conduct visual observation monitoring of the Project activities in Mission Bay, prior to, during, and after each period of Project construction. The visual observation monitoring documentation must be included in the Receiving Water and Visual Observation Monitoring Report(s).

1. **Parameters.** The following parameters, at a minimum, shall be recorded and visually monitored immediately outside of the construction area and in the vicinity of the nearshore sand placement:
  - a. Tidal stage;
  - b. Speed and direction of currents;
  - c. Appearance of floating particulates, rubbish, refuse, garbage, trash or any other solid waste, suspended materials, grease, or oil;
  - d. Discoloration of the water surface, extent of turbidity plume, and any observable sediment movement; and
  - e. Presence of nuisance odors attributable to the dredge activity or dredged material discharge activity to the beach disposal area.

**2. Field Documentation.** All visual observations shall be recorded throughout Project construction activities. In addition to the requirements listed in section VI.H.,

monitoring field logs shall include observations of water quality conditions including sheen, color, odor, floating particulates, and surface visible turbidity plume. Logs shall also include observations of sensitive biological resources and weather conditions, such as wind speed/direction and cloud cover.

If photo documentation is used in support of visual observations of water quality conditions, it should be conducted in accordance with guidelines posted at [http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/401\\_certification/docs/401c/401PhotoDocRB9V713.pdf](http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf). In addition, photo documentation should include Global Positioning System (GPS) coordinates for each of the photo points referenced; and,

3. **Response Actions.** If silt curtains are employed, the condition of the silt curtain is to be monitored and if the curtain is observed to be damaged, has become dislocated, or has gaps where a visible turbidity plume is forming outside of the silt curtain at the Project Site, a response action shall be taken immediately to correct the situation. Response actions may include, but are not limited to, work stoppage until silt curtain repair is completed, implementation of operational modifications, and/or implementation of additional BMPs (e.g., a second silt curtain). Response actions, if needed, shall be documented in the monitoring field log.

K. **Receiving Water Quality Monitoring.** The Applicant shall conduct receiving water monitoring during construction activities at the Project Site and sediment Reuse Area sites to verify that applicable water quality standards for pH, dissolved oxygen (DO) and turbidity are not violated outside of the construction areas. The monitoring plan shall contain the following elements:

1. **Monitoring Stations.** During each monitoring event, water quality parameters including turbidity, DO, salinity, and pH shall be measured at three stations at the active Project Site and at three stations at the active Reuse Area. Monitored water quality measurements shall be compared to "ambient" water quality reference measurements outside of the respective construction or disposal areas in Mission Bay. Two stations shall be compliance stations and one station shall be a reference station. Monitoring station positions shall be located using a Global Position System (GPS) accurate to within  $\pm 3$  meters. Station descriptions are as follows:

- a. **Compliance Stations.** Two monitoring stations at the Project Site shall be located approximately 200 feet from the edge of the active dredge areas to capture all tidal and current conditions at the time of dredging at each area.

Two monitoring stations at the Reuse Area sites shall be located 100 and 300 feet down current from the edge of the sand replenishment activities to capture tidal and current conditions.

- b. **Reference Station.** One reference station for the Project shall be located at least 1,000 feet from the dredge activity up current and beyond the influence of construction activities.

Natural turbidity, DO, and pH shall be determined through measurements at the reference stations. A reference station shall be monitored during every event, because the turbidity water quality objective is based on an acceptably small increase in the vicinity of the construction/disposal activity relative to ambient reference levels. Water Quality Objectives for DO, pH, and turbidity, can be found in Chapter 3, pages 3-25, 3-26, and 3-34 respectively, in the Basin Plan.<sup>3</sup>

2. **Water Quality Measurements.** Monitored water quality measurements for turbidity, DO, and pH at the Compliance Stations shall be compared to Reference Station measurements outside the construction area. Water quality measurements shall be collected from below the water surface at each of the stations. Monitoring depths shall be determined using a depth finder with an accuracy of  $\pm 0.5$  feet. Water quality shall be monitored using instrumentation capable of measuring DO, pH, and turbidity (in nephelometric turbidity units (NTU's)).
3. **Monitoring Frequency.** During dredging, manual water quality samples shall be collected once daily after dredging operations have been underway for a minimum of one hour. The reference station outside the influence of dredging shall also be sampled at similar depths and frequency for comparison to the samples collected from the dredge area. Sampling may be reduced to weekly sampling if no water quality exceedances of the DO, pH, or turbidity described in section II.E of this Certification are observed or measured after 3 consecutive days of monitoring.

If after 3 consecutive days without an exceedance the monitoring frequency is reduced to weekly, all water quality parameters may be measured during one monitoring event per week. The monitoring frequency must return to daily if an exceedance of the DO, pH, or turbidity described in section II.E of this Certification is observed or measured. The monitoring frequency can again be reduced to weekly sampling if 3 consecutive days of monitoring show there are no exceedances of Receiving Water Limitations. When construction activities move to a new Dredge Area, daily monitoring will resume as outlined in this section.

During shoreline re-nourishment activities, water quality monitoring is also required at the active Reuse Area and shall be conducted after discharge activities have been underway for at least 1 hour at the above stated frequency along with the Compliance and Reference Stations monitoring.

4. **Sample Integrity.** The integrity of each water sample collected shall be maintained from the time of collection to the point of data reporting. Proper record keeping and chain of custody (COC) procedures shall be implemented to allow samples to be traced from collection to final disposition. After collection of water samples, documentation on various logs and forms shall be required to adequately identify and catalog sample information; and
5. **Compliance Criteria.** DO, pH, or turbidity limitations are provided in section II.E of this Certification. The point of compliance with these receiving water limitations shall

<sup>3</sup> [http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml)  
August 31, 2017  
Mission Bay Navigational Safety Dredging

be located at the compliance monitoring stations described above. The Project construction area is defined as the area(s) occupied by the dredging barge(s), the scow(s), silt curtains, and other associated work activities. The Reuse Site area is defined as the drop point where the material is discharged at or near the shoreline site location in Mission Bay.

**L. Response Actions to Monitoring Results.** In the event that visual observations or water quality monitoring described in Section VI.J and VI.K of this Certification indicate an exceedance of an applicable Receiving Water Limitation described in Section II. of this Certification, the Applicant shall implement the additional or enhanced operational or engineering BMPs described below:

1. Evaluate the concurrent measurements at background and compliance monitoring stations and supporting visual evidence to determine whether the exceedance is caused by the dredging or disposal activities or by other ambient conditions in the Mission Bay, (e.g., wind waves, boat wakes, barge/ship traffic, and storm inflow).
2. Immediately re-take measurements at background and compliance stations.
3. If the exceedance is confirmed, immediately notify the dredge contractor to immediately modify operations or implement additional BMPs to mitigate the exceedance. Operational modifications may include, but are not limited to the following modifications implemented individually or in combination:
  - a. Adjust the sequence and/or speed of dredging and disposal operations;
  - b. Reposition dredge operations in such a way as to ensure future exceedances do not occur;
  - c. Fix, maintain, and/or upgrade floating silt curtains; and
  - d. Modify, either on a temporary or permanent basis, dredge equipment (such as the dredging bucket size or type).
4. Re-evaluate field measurements at all relevant stations 30 minutes later, after additional BMPs or operational modifications are implemented.
5. If the receiving water limitation exceedance continues to persist, even with additional BMPs, determine and implement more aggressive BMPs or operational modifications that resolve the exceedance or stop work to further assess the source of the exceedance, identify effective mitigation measures, and allow the water column to recover.

**M. Geographic Information System Data.** The Applicant must submit Geographic Information System (GIS) shape files of the Project impact sites within 30 days of the start of project construction and GIS shape files of the Project mitigation sites within 30 days of mitigation installation. All impact and mitigation site shape files must be

polygons. Two GPS readings (points) must be taken on each line of the polygon and the polygon must have a minimum of 10 points. GIS metadata must also be submitted.

**N. Receiving Water and Visual Observation Monitoring Report.** The Applicant shall prepare monitoring reports that contain the results of receiving water quality and visual observation monitoring activities for each week of that month. The reports must be submitted no later than 30 days following each calendar month of in-water construction and must include:

1. The following identification numbers included at the end of the header or subject line: **Certification No. R9-2017-0036:832167:amonji**;
2. The names, qualifications, and affiliations of the persons contributing to the report;
3. A summary table of the monitoring results with a comparison to receiving water limitation compliance criteria;
4. An evaluation, interpretation, and tabulation of the visual observations required under section VI.J and water quality data required under section VI.K including interpretations and conclusions as to whether applicable receiving water limitations were attained at each monitoring station;
5. A description of each incident of non-compliance and its cause, the period of the noncompliance including exact dates and times, and actions taken to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
6. For any weekly monitoring period in which no dredging or disposal activities were conducted, the reporting must include a statement certifying that no dredging or discharge activities occurred during the monitoring period.

**O. Annual Project Progress Reports.** The Applicant must submit annual Project Progress Reports until this certification has expired or been terminated. The Project Progress Reports must describe the status of BMP implementation, compensatory mitigation (as required by CEMP), and compliance with all requirements of this Certification to the San Diego Water Board prior to **March 1** of each year following the issuance of this Certification, until the Project has reached completion. The Annual Project Progress Reports must contain compensatory mitigation monitoring information sufficient to demonstrate how the compensatory mitigation project is progressing towards accomplishing its objectives and meeting its performance standards. Annual Project Progress Reports must be submitted even if Project construction has not begun. The monitoring period for each Annual Project Progress Report shall be January 1<sup>st</sup> through December 31<sup>st</sup> of each year. Annual Project Progress Reports must include, at a minimum, the following:

1. **Project Status and Compliance Reporting.** The Annual Project Progress Report must include the following Project status and compliance information:
  - a. The names, qualifications, and affiliations of the persons contributing to the report;

- b. The status, progress, and anticipated schedule for completion of Project construction activities including the installation and operational status of best management practices project features for erosion and storm water quality treatment;
  - c. A description of Project construction delays encountered or anticipated that may affect the schedule for construction completion;
  - d. A description of each incident of noncompliance during the annual monitoring period and its cause, the period of the noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
  - e. The pre- and post- construction eelgrass surveys, as applicable, required under section V.C of this Certification, including a description of any additional actions that will be taken by the Applicant to mitigate for impact to eelgrass habitat beyond what is expected.
2. **Compensatory Mitigation Monitoring Reporting.** The mitigation monitoring information must be submitted as part of the Annual Project Progress Report for a period of not less than five years, sufficient to demonstrate that the compensatory mitigation project has accomplished its objectives and met ecological success performance standards contained in the Mitigation Plan. Monitoring shall be conducted in accordance with the standards of the CEMP. Following Project implementation the San Diego Water Board may reduce or waive compensatory mitigation monitoring requirements upon a determination that performance standards have been achieved. Conversely, the San Diego Water Board may extend the monitoring period beyond five years upon a determination that the performance standards have not been met or the compensatory mitigation project is not on track to meet them. The Annual Project Progress Report must include the following compensatory mitigation monitoring information:
- a. Names, qualifications, and affiliations of the persons contributing to the report;
  - b. An evaluation, interpretation, and tabulation of the parameters being monitored, including the results of the Mitigation Plan monitoring program, and all quantitative and qualitative data collected in the field;
  - c. Monitoring data interpretations and conclusions as to how the compensatory mitigation project(s) is progressing towards meeting performance standards and whether the performance standards have been met;
  - d. A description of the progress toward implementing a plan to manage the compensatory mitigation project after performance standards have been achieved to ensure the long term sustainability of the resource in perpetuity, including a discussion of long term financing mechanisms, the party responsible

for long term management, and a timetable for future steps;

- e. Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;
- f. As-built drawings of the compensatory mitigation project site(s), no bigger than 11"X17"; and
- g. A survey report documenting boundaries of the compensatory mitigation site(s).

**P. Final Project Completion Report.** The Applicant must submit a Final Project Completion Report to the San Diego Water Board **within 30 days of completion of the Project.** The final report must include the following information:

- 1. Date of construction initiation;
- 2. Date of construction completion;
- 3. BMP installation and operational status for the Project;
- 4. As-built drawings of the Project, no bigger than 11"X17";
- 5. Photo documentation of implemented post-construction BMPs and all areas of permanent and temporary impacts, prior to and after project construction. Photo documentation must be conducted in accordance with guidelines posted at [http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/401\\_certification/docs/401c/401PhotoDocRB9V713.pdf](http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf). In addition, photo documentation must include Global Positioning System (GPS) coordinates for each of the photo points referenced; and

**Q. Reporting Authority.** The submittal of information required under this Certification, or in response to a suspected violation of any condition of this Certification, is required pursuant to Water Code section 13267 and 13383. Civil liability may be administratively imposed by the San Diego Water Board for failure to submit information pursuant to Water Code sections 13268 or 13385.

**R. Electronic Document Submittal.** The Applicant must submit all reports and information required under this Certification in electronic format via e-mail to [SanDiego@waterboards.ca.gov](mailto:SanDiego@waterboards.ca.gov). Documents over 50 megabytes will not be accepted via e-mail and must be placed on a disc and delivered to:

California Regional Water Quality Control Board  
San Diego Region  
Attn: 401 Certification No. R9-2017-0036:832167:amonji  
2375 Northside Drive, Suite 100  
San Diego, California 92108



Each electronic document must be submitted as a single file, in Portable Document Format (PDF), and converted to text searchable format using Optical Character Recognition (OCR). All electronic documents must include scanned copies of all signature pages; electronic signatures will not be accepted. Electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2017-0036:832167:amonji.

- S. Document Signatory Requirements.** All applications, reports, or information submitted to the San Diego Water Board must be signed as follows:
1. For a corporation, by a responsible corporate officer of at least the level of vice president.
  2. For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
  3. For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.
  4. A duly authorized representative may sign applications, reports, or information if:
    - a. The authorization is made in writing by a person described above.
    - b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
    - c. The written authorization is submitted to the San Diego Water Board Executive Officer.

If such authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the Project, a new authorization satisfying the above requirements must be submitted to the San Diego Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative.

- T. Document Certification Requirements.** All applications, reports, or information submitted to the San Diego Water Board must be certified as follows:

*"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*

## VII. NOTIFICATION REQUIREMENTS

- A. ~~Twenty-Four Hour Non-Compliance Reporting.~~** The Applicant shall report any noncompliance which may endanger health or the environment. Any such information

shall be provided orally to the San Diego Water Board within **24 hours** from the time the Applicant becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Applicant becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The San Diego Water Board, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

- B. *Caulerpa Taxifolia*.** The Applicant must conduct a surveillance-level survey for *Caulerpa taxifolia*, in accordance with the requirements in the National Marine Fisheries Service's *Caulerpa* Control Protocol (version 4), dated February 25, 2008, not more than 90 days before the initiation of construction to determine presence/absence of this species within the immediate vicinity of the project. If *Caulerpa taxifolia* is identified during a survey, or at any other time before, during, or within 120 days following completion of authorized activities, both National Marine Fisheries Service and California Department of Fish and Wildlife must be contacted within 24 hours of first noting the occurrence. In the event *Caulerpa taxifolia* is detected, all disturbing activity must cease until such time as the infestation has been isolated and treated, or the risk of spread from the disturbing activity is eliminated in accordance with the *Caulerpa* Control Protocol.
- C. Hazardous Substance Discharge.** Except as provided in Water Code section 13271(b), any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the County of San Diego, in accordance with California Health and Safety Code section 5411.5 and the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Government Code Title 2, Division 1, Chapter 7, Article 3.7 (commencing with section 8574.17), and immediately notify the State Water Board or the San Diego Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of section 13271 of the Water Code unless the Applicant is in violation of a Basin Plan prohibition.
- D. Oil or Petroleum Product Discharge.** Except as provided in Water Code section 13272(b), any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Government Code Title 2, Division 1, Chapter 7, Article 3.7 (commencing with section 8574.1). This requirement does not

require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Clean Water Act section 311, or the discharge is in violation of a Basin Plan prohibition.

- E. **Anticipated Noncompliance.** The Applicant shall give advance notice to the San Diego Water Board of any planned changes in the Project or the Compensatory Mitigation project which may result in noncompliance with Certification conditions or requirements.
- F. **Commencement of Construction Notification.** The Applicant must notify the San Diego Water Board in writing at least 5 days prior to the start of initial Project dredging activities.
- G. **Transfers.** This Certification is not transferable in its entirety or in part to any person or organization except after notice to the San Diego Water Board in accordance with the following terms:
1. **Transfer of Property Ownership:** The Applicant must notify the San Diego Water Board of any change in ownership of the Project area. Notification of change in ownership must include, but not be limited to, a statement that the Applicant has provided the purchaser with a copy of the Section 401 Water Quality Certification and that the purchaser understands and accepts the certification requirements and the obligation to implement them or be subject to liability for failure to do so; the seller and purchaser must sign and date the notification and provide such notification to the San Diego Water Board **within 10 days of the transfer of ownership.**
  2. **Transfer of Mitigation Responsibility:** Any notification of transfer of responsibilities to satisfy the mitigation requirements set forth in this Certification must include a signed statement from an authorized representative of the new party (transferee) demonstrating acceptance and understanding of the responsibility to comply with and fully satisfy the mitigation conditions and agreement that failure to comply with the mitigation conditions and associated requirements may subject the transferee to enforcement by the San Diego Water Board under Water Code section 13385, subdivision (a). Notification of transfer of responsibilities meeting the above conditions must be provided to the San Diego Water Board **within 10 days of the transfer date.**
  3. **Transfer of Post-Construction BMP Maintenance Responsibility:** The Applicant assumes responsibility for the inspection and maintenance of all post-construction structural BMPs until such responsibility is legally transferred to another entity. At the time maintenance responsibility for post-construction BMPs is legally transferred the Applicant must submit to the San Diego Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications. The Applicant must provide such notification to the San Diego Water Board **within 10 days of the transfer of BMP maintenance responsibility.**

Upon properly noticed transfers of responsibility, the transferee assumes responsibility for compliance with this Certification and references in this Certification to the Applicant will be interpreted to refer to the transferee as appropriate. Transfer of responsibility does not necessarily relieve the Applicant of responsibility for compliance with this Certification in the event that a transferee fails to comply.

## VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

- A. The City of San Diego is the Lead Agency under the California Environmental Quality Act (CEQA) (Public Resources Code section 21000, et seq.) section 21067, and CEQA Guidelines (California Code of Regulations, title 14, section 15000 et seq.) section 15367, and has filed a Notice of Determination dated May 31, 2017 for the Mitigated Negative Declaration (MND) titled Mission Bay Park Navigational Safety Dredging (State Clearing House Number 2017021052). The Lead Agency has determined the Project will have a significant effect on the environment and mitigation measures were made a condition of the Project.
- B. The San Diego Water Board is a Responsible Agency under CEQA (Public Resources Code section 21069; CEQA Guidelines section 15381). The San Diego Water Board has considered the Lead Agency's MND and finds that the Project as proposed will have a significant effect on resources within the San Diego Water Board's purview.
- C. The San Diego Water Board has required mitigation measures as a condition of this Certification to avoid or reduce the environmental effects of the Project to resources within the Board's purview to a less than significant level.
- D. The Lead Agency has adopted a mitigation monitoring and reporting program pursuant to Public Resources Code section 21081.6 and CEQA Guidelines section 15097 to ensure that mitigation measures and revisions to the Project identified in the FEIR are implemented. The Mitigation Monitoring and Reporting Program (MMRP) is included and incorporated by reference in Attachment 5 to this Certification. The Applicant shall implement the Lead Agency's MMRP described in the FEIR, as it pertains to resources within the San Diego Water Board's purview. The San Diego Water Board has imposed additional MMRP requirements as specified in sections V and VI of this Certification.
- E. As a Responsible Agency under CEQA, the San Diego Water Board will file a Notice of Determination in accordance with CEQA Guidelines section 15096 subdivision (i).

## IX. SAN DIEGO WATER BOARD CONTACT PERSON

Alan Monji, Environmental Scientist  
Telephone: 619-521-3968  
Email: [Alan.Monji@waterboards.ca.gov](mailto:Alan.Monji@waterboards.ca.gov)


## X. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **Mission Bay Navigational Safety Dredging** (Certification No. R9-2017-0036) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of

Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)," which requires compliance with all conditions of this Water Quality Certification. Please note that enrollment under Order No. 2003-017-DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the San Diego Water Board may issue individual waste discharge requirements at that time.

Except insofar as may be modified by any preceding conditions, all Certification actions are contingent on (a) the discharge being limited to, and all proposed mitigation being completed in strict compliance with, the applicants' Project description and/or the description in this Certification, and (b) compliance with all applicable requirements of the Basin Plan.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Certification No. R9-2017-0036 issued on August 23, 2017.

  
\_\_\_\_\_  
DAVID W. GIBSON  
Executive Officer  
San Diego Water Board

23 August 2017  
Date

## ATTACHMENT 1 DEFINITIONS

**Activity** - when used in reference to a permit means any action, undertaking, or project including, but not limited to, construction, operation, maintenance, repair, modification, and restoration which may result in any discharge to waters of the state.

**Buffer** - means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

**California Rapid Assessment Method (CRAM)** - is a wetland assessment method intended to provide a rapid, scientifically-defensible and repeatable assessment methodology to monitor status and trends in the conditions of wetlands for applications throughout the state. It can also be used to assess the performance of compensatory mitigation projects and restoration projects. CRAM provides an assessment of overall ecological condition in terms of four attributes: landscape context and buffer, hydrology, physical structure and biotic structure. CRAM also includes an assessment of key stressors that may be affecting wetland condition and a "field to PC" data management tool (eCRAM) to ensure consistency and quality of data produced with the method.

**Compensatory Mitigation Project** - means compensatory mitigation implemented by the Applicant as a requirement of this Certification (i.e., applicant -responsible mitigation), or by a mitigation bank or an in-lieu fee program.

**Discharge of dredged material** – means any addition of dredged material into, including redeposit of dredged material other than incidental fallback within, the waters of the United States and/or State.

**Discharge of fill material** – means the addition of fill material into waters of the United States and/or State.

**Dredged material** – means material that is excavated or dredged from waters of the United States and/or State.

**Ecological Success Performance Standards** – means observable or measurable physical (including hydrological), chemical, and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

**Enhancement** – means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

**Establishment** – means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist. Creation results in a gain in aquatic resource area.

**Fill material** – means any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a water body.

**Isolated wetland** – means a wetland with no surface water connection to other aquatic resources.

**Mitigation Bank** – means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing mitigation for impacts authorized by this Certification.

**Preservation** - means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

**Re-establishment** - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

**Rehabilitation** - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/ historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

**Restoration** - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

**Start of Project Construction** - For the purpose of this Certification, "start of Project construction" means to engage in a program of on-site construction, including site clearing, grading, dredging, landfilling, changing equipment, substituting equipment, or even moving the location of equipment specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source within waters of the United States and/or State.

**Uplands** - means non-wetland areas that lack any field-based indicators of wetlands or other aquatic conditions. Uplands are generally well-drained and occur above (i.e., up-slope) from nearby aquatic areas. Wetlands can, however, be entirely surrounded by uplands. For example, some natural seeps and constructed stock ponds lack aboveground hydrological connection to other aquatic areas. In the watershed context, uplands comprise the landscape matrix in which aquatic areas form. They are the primary sources of sediment, surface runoff, and associated chemicals that are deposited in aquatic areas or transported through them.

**Water quality objectives and other appropriate requirements of state law** – means the water quality objectives and beneficial uses as specified in the appropriate water quality control plan(s); the applicable provisions of sections 301, 302, 303, 306, and 307 of the Clean Water Act; and any other appropriate requirement of state law.

**Waters of the State** - means any surface water or groundwater, including saline waters, within the boundaries of the State. [Water Code section 13050, subd. (e)].





Jun 07, 2017 10:49 AM  
OFFICIAL RECORDS  
Ernest J. Dronenburg, Jr.,  
SAN DIEGO COUNTY RECORDER  
FEES: \$64.00

PAGES: 14

**RECORDING REQUESTED  
BY  
CITY OF SAN DIEGO  
DEVELOPMENT SERVICES  
PERMIT INTAKE  
MAIL STATION 501**

**WHEN RECORDED MAIL TO  
CITY CLERK  
MAIL STATION 2A**

WBS Number B-10163.02.06

SPACE ABOVE THIS LINE FOR RECORDER'S USE

**SITE DEVELOPMENT PERMIT NO. 1928412  
MISSION BAY DREDGING PROJECT NO. 520687  
CITY COUNCIL**

This Site Development Permit No. 1928412 is granted by the City Council of the City of San Diego to the City of San Diego, Owner and Permittee, pursuant to San Diego Municipal Code (SDMC) Section 126.0504. The project site is located within Mission Beach, Pacific Beach, and Mission Bay Park Community Plan areas, in the Mission Bay Park Improvement Zone as set forth in Charter section 55.2, in the zones RS-1-7, IL-3-1, and un-zoned areas.

Subject to the terms and conditions set forth in this Permit, permission is granted to Owner and Permittee to perform maintenance dredging within Mission Bay for a total of 63 acres of dredging within 14 dredge sites locations, creating 122,000 to 220,850 cubic yards of dredge material and restoration of habitat within the Mission Bay Recreational Area described and identified by size, dimension, quantity, type, and location on the approved exhibits [Exhibit "A"] dated May 23, 2017, on file in the Development Services Department.

The project shall include:

- a. Approximately 63.36 acres of maintenance dredging within Mission Bay;
- b. Reuse of dredged sediment (to fill deep basins and level out raised areas back to the baseline chart). The dredged material will fill and rehabilitate areas totaling 19.47 acres of borrow site fills to develop eelgrass habitat; and
- c. Temporary contractor staging within approximately 2.5 acres of bay waters, and 1.5 acres of vacant beach at South Shores; and
- d. Restoration of approximately 43.92 acres of wetlands.

**STANDARD REQUIREMENTS:**

1. This permit must be utilized within thirty six (36) months after the date on which all rights of appeal have expired. If this permit is not utilized in accordance with Chapter 12, Article 6, Division 1 of the SDMC within the 120 month period, this permit shall be void unless an Extension of Time has been granted. Any such Extension of Time must meet all SDMC requirements and applicable guidelines in effect at the time the extension is considered by the appropriate decision maker. This permit must be utilized by May 23, 2020.
2. While this Permit is in effect, the subject property shall be used only for the purposes and under the terms and conditions set forth in this Permit unless otherwise authorized by the appropriate City decision maker.
3. This Permit is a covenant running with the subject property and all of the requirements and conditions of this Permit and related documents shall be binding upon the Owner/Permittee and any successor(s) in interest.
4. The continued use of this Permit shall be subject to the regulations of this and any other applicable governmental agency.
5. Issuance of this Permit by the City of San Diego does not authorize the Owner/Permittee for this Permit to violate any Federal, State or City laws, ordinances, regulations or policies including, but not limited to, the Endangered Species Act of 1973 (ESA) and any amendments thereto (16 U.S.C. § 1531 et seq.).
6. Construction plans shall be in substantial conformity to Exhibit "A." Changes, modifications, or alterations to the construction plans are prohibited unless appropriate application(s) or amendment(s) to this Permit have been granted.
7. All of the conditions contained in this Permit have been considered and were determined necessary to make the findings required for approval of this Permit. The Permit holder is required to comply with each and every condition in order to maintain the entitlements that are granted by this Permit.

**ENVIRONMENTAL/MITIGATION REQUIREMENTS:**

8. Mitigation requirements in the Mitigation, Monitoring, and Reporting Program (MMRP) shall apply to this Permit. These MMRP conditions are hereby incorporated into this Permit by reference.
9. The mitigation measures specified in the MMRP and outlined in **MITIGATED NEGATIVE DECLARATION NO. 520687**, shall be noted on the construction plans and specifications under the heading ENVIRONMENTAL MITIGATION REQUIREMENTS.
10. The Owner/Permittee shall comply with the MMRP as specified in **MITIGATED NEGATIVE DECLARATION NO. 520687**, to the satisfaction of the Development Services

Department and the City Engineer. Prior to the issuance of the "Notice to Proceed" with construction, all conditions of the MMRP shall be adhered to, to the satisfaction of the City Engineer. All mitigation measures described in the MMRP shall be implemented for the following issue areas: **Biological Impacts, Water Quality, and MHPA Land Use Adjacency.**

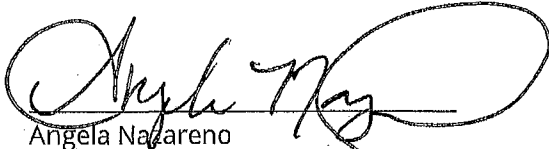
11. Encountering buried solid waste, landfill gas, or leachate during this project is not anticipated. If solid waste, landfill gas, or leachate is encountered, plan to notify the City of San Diego Solid Waste Local Enforcement Agency (LEA) immediately at 619-533-3688.

**INFORMATION ONLY:**

- The issuance of this discretionary permit alone does not allow the immediate commencement or continued operation of the proposed use on site. Any operation allowed by this discretionary permit may only begin or recommence after all conditions listed on this permit are fully completed and all required ministerial permits have been issued and received final inspection.

APPROVED by the City Council of the City of San Diego on May 23, 2017 and by Resolution No R- 311156.

AUTHENTICATED BY THE CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT

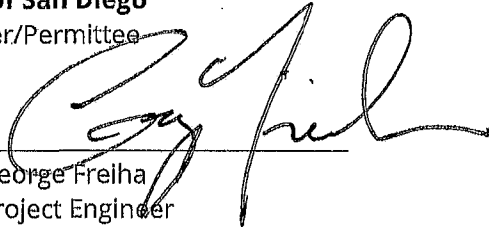


Angela Nazareno  
Development Project Manager

**NOTE: Notary acknowledgment  
must be attached per Civil Code  
section 1189 et seq.**

**The undersigned Owner/Permittee**, by execution hereof, agrees to each and every condition of this Permit and promises to perform each and every obligation of Owner/Permittee hereunder.

**City of San Diego**  
Owner/Permittee

By   
George Freiha  
Project Engineer

**NOTE: Notary acknowledgments  
must be attached per Civil Code  
section 1189 et seq.**

RECEIVED  
CITY CLERK'S OFFICE  
17 JUN -9 PM 11:04  
SAN DIEGO, CALIF. *26.*

**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**

**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California )  
County of San Diego  
On June 5, 2017 before me, Rose Marie White, Notary Public,  
Date Here Insert Name and Title of the Officer  
personally appeared Angela Nazareno  
Name(s) of Signer(s)  
George Frank

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature Rose Marie White  
Signature of Notary Public

Place Notary Seal Above

**OPTIONAL**

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

**Description of Attached Document**

Title or Type of Document: \_\_\_\_\_ Document Date: \_\_\_\_\_

Number of Pages: \_\_\_\_\_ Signer(s) Other Than Named Above: \_\_\_\_\_

**Capacity(ies) Claimed by Signer(s)**

Signer's Name: \_\_\_\_\_

Corporate Officer — Title(s): \_\_\_\_\_

Partner —  Limited  General

Individual  Attorney in Fact

Trustee  Guardian or Conservator

Other: \_\_\_\_\_

Signer Is Representing: \_\_\_\_\_

Signer's Name: \_\_\_\_\_

Corporate Officer — Title(s): \_\_\_\_\_

Partner —  Limited  General

Individual  Attorney in Fact

Trustee  Guardian or Conservator

Other: \_\_\_\_\_

Signer Is Representing: \_\_\_\_\_

RESOLUTION NUMBER R- 311156

DATE OF FINAL PASSAGE MAY 23 2017

ITEM # 2392  
5/23/17

A RESOLUTION OF THE COUNCIL OF THE CITY OF  
SAN DIEGO APPROVING SITE DEVELOPMENT PERMIT  
NO. 1928412 FOR MISSION BAY DREDGING – PROJECT  
NO. 520687.

WHEREAS, City of San Diego, Owner and Permittee, filed an application for a Site Development Permit to perform maintenance dredging within Mission Bay for a total of 63 acres of dredging within 14 dredge sites locations, creating 122,000 to 220,850 cubic yards of dredge material and restoration of habitat known as the Mission Bay Dredging project (Project), located within the Mission Beach, Pacific Beach, and Mission Bay Park Community Plan areas, in the Mission Bay Park Improvement Zone as set forth in Charter section 55.2, in the zones RS-1-7, IL-3-1, and un-zoned areas; and

WHEREAS, under Charter section 280(a)(2) this resolution is not subject to veto by the Mayor because this matter requires the City Council to act as a quasi-judicial body and where a public hearing was required by law implicating due process rights of individuals affected by the decision and where the Council was required by law to consider evidence at the hearing and to make legal findings based on the evidence presented; and

WHEREAS, the matter was set for public hearing on May 23, 2017, testimony having been heard, evidence having been submitted, and the City Council having fully considered the matter and being fully advised concerning the same; NOW, THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, that it adopts the following findings with respect to Site Development Permit No. 1928412:

**SITE DEVELOPMENT PERMIT – SAN DIEGO MUNICIPAL CODE (SDMC)**  
**SECTION 126.0504**

**Findings for all Site Development Permits**

1. **The proposed development will not adversely affect the applicable land use plan.** The City of San Diego's General Plan Land Use Element classifies Mission Bay Park/Mission Bay as Dedicated Park Land and Open Space which is set aside for park and recreation purposes. The Mission Bay Park is the largest aquatic park of its kind in the country and consist of over 4,600 acres in roughly equal parts land and water with 27 miles of shoreline. Mission Bay was originally a marshy lagoon, which was dredged and developed into a resource-based park to accommodate aquatic recreation: water skiing, swimming, boating, small boat harboring, and tourist-based leaseholds. The Open Space land use classification designation provides for the preservation of land that applies to both land and/or water areas. In addition, the Conservation Element designates Mission Bay as a coastal resource and adopted numerous conservation policies to protect, preserve, restore and enhance Mission Bay. Over the years, recreational boating, storms and water currents have impacted the bottom of Mission Bay causing sediment travel and creation of shoals (built up areas of sand) and deep basins in other areas. In order to maintain the navigational water safety in the bay, the intent of the Project is to dredge the bottom of the bay to the original survey elevation and utilize the dredged material to fill the depleted basins/reuse areas within the bay in accordance with the Mission Bay Baseline Chart. The Project implements the Conservation Element's policy to ensure that Mission Bay is accessible and available for recreational uses, while ensuring the navigational safety of the water areas.

The Project work area includes approximately 82.83 acres of bay waters and sand beach, as well as temporary staging areas within approximately 2.50 acres of bay waters and 1.55 acres of vacant upland/disturbed land at south shores. A total of 63.36 acres of dredging would occur as part of this project, creating approximately 122,000 to 220,850 cubic yard of dredged material which would be used onsite including beach and subtidal borrow site fill areas totaling 19.47 acres. Borrow site fill areas will be planted to develop eelgrass habitat, as will dredged areas. The Project provides for a 100 percent reuse of dredged materials with no material being exported from the bay.

The Project will result in improvements to maintain navigational and public health and safety within Mission Bay Park, and will not change the land use of the site or adjacent uses. The Project is consistent with the goals and objectives of the Mission Bay Park Master Plan Update (adopted 1994, amended 2002), including the goals for water use listed in Appendix A. The Project is also consistent with the City of San Diego City Charter, Section 55.2 and is listed as a priority project for the restoration of navigable waters within Mission Bay Park and elimination of navigational hazards. The proposed dredging and maintenance of Mission Bay, a dedicated parkland and Open Space, will not adversely affect the applicable land use plan or the elements of the City's General Plan.

2. **The proposed development will not be detrimental to the public health, safety, and welfare.** The Project would remediate an adverse current condition throughout

portions of Mission Bay occurring as a result of recreational boating, storms and water currents that have impacted the bottom of Mission Bay over time by causing sediment travel and creation of shoals (built up areas of sand) and deep basins in other areas. In order to maintain the navigational water safety in the bay, the Project is to dredge the bottom of the bay to the original survey elevation and utilize the dredged material to fill the depleted/reuse areas within the bay in accordance with the Mission Bay Baseline Chart in order to improve and maintain navigational and public health and safety throughout affected areas in the bay.

Project construction will include construction Best Management Practices (BMPs) stipulated in the required Water Pollution Control Plan and within the Mitigated Negative Declaration (MND) No. 520687 Mitigation, Monitoring, and Reporting Program (MMRP) for water quality. In addition, traffic controls to include temporary park pathway diversions or closures lasting no more than 1-hour would be included as part of this Project. Proposed work is to be completed outside of the summer season to avoid impacts to sensitive species and so as to not disrupt normal park use activities and events. As such, the Project will not be detrimental to the public health, safety, and welfare.

**3. The proposed development will comply with the applicable regulations of the Land Development Code, including any allowable deviations pursuant to the Land Development Code (LDC).** This Capital Improvement Project to conserve, preserve, enhance the City of San Diego's most precious assets (Open Space and Coastal Resources) will comply with all applicable regulations of the Land Development Code, and allowable deviation. The Project involves maintenance dredging within the waters of Mission Bay and environmentally sensitive lands and within the sensitive Coastal Overlay Zone, thereby a Site Development Permit (SDP) and Coastal Development Permit (CDP) will be required. The Project as conditioned within the SDP and MND will comply with all applicable regulations of the LDC, Biology Guidelines, and work within the Coastal Overlay Zone. Staff has determined that with compliance and implementation of these conditions, the Project will comply with the allowable deviations of the Land Development Code.

### **Supplemental Findings--Environmentally Sensitive Lands**

**1. The site is physically suitable for the design and siting of the proposed development and the development will result in minimum disturbance to environmentally sensitive lands.** Over the years, recreational boating, storms and water currents have impacted the bottom of Mission Bay causing sediment travel, the creation of shoals (built up areas of sand) and deep basins. In order to maintain navigational water safety in the bay, this essential public project proposes to dredge the bottom of the bay back to its original survey elevation and utilize the dredged material to fill the depleted basins/reuse areas within the bay in accordance with the Mission Bay Baseline Chart.

The Project work area includes approximately 82.83 acres of existing bay waters and sand beach, as well as temporary staging areas within approximately 2.50 acres of bay waters and 1.55 acres of vacant upland/disturbed land at south shores. A total of 63.36 acres of dredging would occur as part of this Project, creating approximately 122,000 to 220,850 cubic yard of



dredged material which would be used onsite including beach and subtidal borrow site fill areas totaling 19.47 acres.

The Project provides for a 100 percent reuse of dredged materials with no material being exported from the bay. This is the minimal disturbance required in order to maintain the navigational water safety in the bay by dredging the bottom of the bay to the original survey elevation and utilizing the dredged material to fill the depleted/reuse areas within the bay in accordance with the Mission Bay Baseline Chart.

As a result of project activities, approximately 42.93 acres of eelgrass would be impacted. Mitigation of eelgrass impacts is governed by multiagency adopted mitigation standards established in the California Eelgrass Mitigation Policy (CEMP) (National Marine Fisheries Service 2014). This policy requires either pre-developed eelgrass mitigation at a 1:1 ratio, or mitigation implemented coincident with impacts requiring successful establishment at a 1.2:1 mitigation ratio resulting in approximately 51.51 acres of shallow bay eelgrass mitigation. A comprehensive eelgrass mitigation plan has been developed that meets the CEMP mitigation requirements, and is required to be implemented in accordance with MND No. 520687 MMRP requirements.

The project location is adjacent to the Multiple Species Conservation Program's (MSCP) Multi-Habitat Planning Area (MHPA). Compliance with the Land Use (MHPA Adjacency) mitigation requirements outlined in MND No. 520687 MMRP would minimize the potential for indirect impacts. No dredging activities are proposed during the least tern nesting season. Any dredging activities occurring during the least tern nesting season would require prior approval by the applicable resource agencies. Project construction will include construction BMPs stipulated in the required Water Pollution Control Plan and within the MND No. 520687 MMRP for water quality. Therefore, the Project has been designed and conditioned to adequately minimize disturbance to environmentally sensitive lands.

**2. The proposed development will minimize the alteration of natural land forms and will not result in undue risk from geologic and erosional forces, flood hazards, or fire hazards.** The Project work area includes approximately 82.83 acres of existing bay waters and sand beach, as well as temporary staging areas within approximately 2.50 acres of bay waters and 1.55 acres of vacant sand beach/disturbed land at south shores. A total of 63.36 acres of dredging would occur as part of this project, creating approximately 122,000 to 220,850 cubic yard of dredged material which would be used onsite including beach and subtidal borrow site fill areas totaling 19.47 acres. Borrow site fills will be planted to develop eelgrass habitat, as will dredged areas. The Project provides for a 100 percent reuse of dredged materials with no material being exported from the bay. This is the minimal disturbance required in order to maintain the navigational water safety in the bay by dredging the bottom of the bay to the original survey elevation and utilizing the dredged material to fill the depleted basins/reuse areas within the bay in accordance with the Mission Bay Baseline Chart. Staging areas would require standard storm water and construction BMPs to prevent erosion or flood hazards. Dredging activities within the bay waters would minimize accidental boating or fire hazards.

The Project and methods of implementation are intended to minimize the alteration of remaining natural land forms in the area and vicinity of the Project site except to restore the original survey elevation of the bottom of the bay to pre-existing conditions, and will not result in undue risk from geologic and erosional forces, flood and/or fire hazards.

**3. The proposed development will be sited and designed to prevent adverse impacts on any adjacent environmentally sensitive lands (ESL).** The Project is located adjacent to the City's MHPA, and would be consistent with MHPA Land Use Adjacency Guidelines through compliance with the Land Use (MHPA Adjacency) mitigation requirements in accordance with MND No. 520687 MMRP. Potential indirect impacts to nesting least tern will be avoided by conducting dredging activities outside the least tern nesting season. Any dredging activities occurring during the least tern nesting season would require prior approval from the applicable resource agencies. The work will include implementation of BMPs to be stipulated in the Water Pollution Control Plan to minimize adverse effects related to erosion and water pollution. Construction lighting will be directed away/shielded from construction areas adjacent to the MHPA. The Project has been sited and designed to prevent adverse impacts to any adjacent environmentally sensitive lands. Monitoring will be provided to ensure that construction impacts do not occur in sensitive areas.

**4. The proposed development will be consistent with the City of San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan.** Portions of the Project are located adjacent to the MHPA as identified in the City of San Diego's MSCP Subarea Plan. Project implementation will not result in an increase in paved areas draining to the MHPA, or otherwise cause additional runoff or toxins to drain to the MHPA. Any temporary construction lighting will be directed/shielded away from the MHPA. The Project will not result in indirect impacts from the introduction of non-native species into native habitats, as the project would occur within open waters and would not include any revegetation other than planting native eel grass in accordance with the CEMP and MND No. 520687 MMRP. Project dredging will not include the creation of manufactured slopes within the MHPA. The Project will not result in new development adjacent to the MHPA, as all dredge/reuse areas are located outside the limits of the MHPA. Access, trails, and pathways are not proposed into the MHPA. Implementation of the MSCP Subarea Plan MHPA Land Use Adjacency Guidelines as outlined in the MMRP would avoid/minimize indirect impacts to the MHPA. Therefore, the Project is consistent with the City of San Diego's MSCP Subarea Plan.

**5. The proposed development will not contribute to the erosion of public beaches or adversely impact local shoreline sand supply.** Construction BMPs will be implemented during construction in accordance with the required Water Pollution Control Plan (WPCP) in order to prevent runoff to surrounding areas and erosion. The Project will also include placement of dredged materials on three shoreline reuse areas occurring on Crown Point and Vacation Isle in order to repair eroded shorelines. The Project and methods of implementation are intended to prevent erosion of public beaches and adverse impacts to local shoreline sand supply, and would improve overall public beach and shoreline conditions within Mission Bay Park.

6. **The nature and extent of mitigation required as a condition of the permit is reasonably related to, and calculated to alleviate, negative impacts created by the proposed development.** An Environmental Initial Study concluded that implementation of the Project would result in impacts to biological resources, water quality and land use (MHPA Land Use Adjacency). These impacts are noted and discussed in detail in MND No. 520687. The MND concluded that impacts would be reduced to a level below significance through implementation of the MMRP.

The Project and Project-related impacts analyzed within MND No. 520687 have been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA). Mitigation measures have been incorporated into the Site Development Permit as conditions, and are designed to reduce Project-related impacts to below a level of significance. The mitigation is directly related to the Project, its requirements, and the need to construct the Project, while at the same time it alleviates any negative impacts that may occur as a result of this Project because the appropriately developed mitigation will satisfy all such requirements.

### **Supplemental Findings--Environmentally Sensitive Lands Deviations**

1. **There are no feasible measures that can further minimize the potential adverse effects on environmentally sensitive lands.** The Project has been designed and conditioned to include the least adverse effect on environmentally sensitive lands through implementation of a comprehensive eel grass mitigation plan prepared in accordance with the CEMP, conformance with the MSCP MHPA Land Use Adjacency Guidelines, and compliance with the water quality mitigation measures outlined in the MND No. 520687 MMRP. In addition, a Water Pollution Control Plan will also be required to prevent pollutant runoff and erosion at construction areas, and dredging activities would occur outside the least tern breeding season. Any dredging activities occurring during the least tern breeding season would require prior approvals from the applicable resource agencies. Therefore, the Project, avoidance/minimization measures, and mitigation requirements outlined in the MND No. 520687 MMRP, have been prepared to ensure minimal potential adverse effects to environmentally sensitive lands.

2. **The proposed deviation is the minimum necessary to afford relief from special circumstances or conditions of the land, not of the applicant's making.** The Project work area includes approximately 82.83 acres of existing bay waters and sand beach, as well as temporary staging areas within approximately 2.50 acres of bay waters and 1.55 acres of vacant upland/disturbed land at south shores. A total of 63.36 acres of dredging would occur as part of this project, creating approximately 122,000 to 220,850 cubic yard of dredged material which would be used onsite including beach and subtidal borrow site fill areas totaling 19.47 acres. Borrow site fill areas will be planted to develop eelgrass habitat, as will dredged areas. The Project provides for a 100 percent reuse of dredged materials with no material being exported from the bay. Over the years, recreational boating, storms and water currents have impacted the bottom of Mission Bay causing sediment travel and creation of shoals – built up of areas with and deep basins in other areas. This is the minimal disturbance required in order to maintain the navigational water safety in the bay by dredging the bottom of the bay to the original survey elevation and utilizing the dredged material to fill the depleted/reuse areas within the bay in

accordance with the Mission Bay Baseline Chart. A comprehensive eelgrass mitigation plan has been developed that meets the CEMP mitigation requirements and fully mitigates all eel grass impacts within Mission Bay. Therefore, the Project deviations are the minimum necessary to afford relief from special circumstances or conditions of the land, not of the applicant's making.

The above findings are supported by the minutes, maps and exhibits, all of which are incorporated herein by this reference.

BE IT FURTHER RESOLVED, that Site Development Permit No. 1928412 is granted to the City of San Diego, Owner/Permittee, under the terms and conditions set forth in the attached permit which is made a part of this resolution.

APPROVED: MARA W. ELLIOTT, City Attorney

By Shannon M. Thomas  
Shannon M. Thomas  
Deputy City Attorney

SMT:als  
05/04/2017  
Or.Dept:DSD  
Doc. No.: 1497767

Attachment: Site Development Permit No. 1928412

Passed by the Council of The City of San Diego on MAY 23 2017, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Barbara Bry	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lorie Zapf	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Ward	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Myrtle Cole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mark Kersey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Cate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scott Sherman	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
David Alvarez	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Georgette Gomez	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date of final passage MAY 23 2017.

(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

KEVIN L. FAULCONER

Mayor of The City of San Diego, California.

ELIZABETH S. MALAND

City Clerk of The City of San Diego, California.

(Seal)

By *Hy Beady*, Deputy

Office of the City Clerk, San Diego, California

Resolution Number R-

**311156**

Passed by the Council of The City of San Diego on May 23, 2017, by the following vote:

YEAS: BRY, ZAPF, WARD, COLE, KERSEY, CATE, SHERMAN,  
ALVAREZ, GOMEZ.

NAYS: NONE.

NOT PRESENT: NONE.

RECUSED: NONE.

AUTHENTICATED BY:

**KEVIN L. FAULCONER**

Mayor of The City of San Diego, California

**ELIZABETH S. MALAND**

City Clerk of The City of San Diego, California

(Seal)

By: Stacy D. Ready, Deputy

I HEREBY CERTIFY that the above and foregoing is a full, true and correct copy of  
RESOLUTION NO. R-311156, approved on May 23, 2017. The date of final passage  
is May 23, 2017.

**ELIZABETH S. MALAND**

City Clerk of the City of San Diego, California

(Seal)

By: Stacy Ready, Deputy

## CONTRACT AGREEMENT

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### CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and \_\_\_\_\_, herein called "Contractor" for construction of **Mission Bay Navigational Safety Dredging**; Bid No. **K-18-1576-DBB-3**; in the amount of \_\_\_\_\_ (\$ \_\_\_\_\_), which is comprised of the Base Bid plus/minus Additive/Deductive Alternates \_\_\_\_\_.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:
  - (a) The attached Faithful Performance and Payment Bonds.
  - (b) The attached Proposal included in the Bid documents by the Contractor.
  - (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).
  - (d) That certain documents entitled **Mission Bay Navigational Safety Dredging**, on file in the office of the Public Works Department as Document No. **B-10163**, as well as all matters referenced therein.
2. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **Mission Bay Navigational Safety Dredging**, Bid No. **K-18-1576-DBB-3**, San Diego, California.
3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.
4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
5. This contract is effective as of the date that the Mayor or designee signs the agreement.

**CONTRACT AGREEMENT (continued)**

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**IN WITNESS WHEREOF**, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Resolution No. R - \_\_\_\_\_ or Municipal Code \_\_\_\_\_ authorizing such execution.

**THE CITY OF SAN DIEGO**

**APPROVED AS TO FORM**

Mara W. Elliott, City Attorney

By \_\_\_\_\_

By \_\_\_\_\_

Print Name: \_\_\_\_\_  
Mayor or designee

Print Name: \_\_\_\_\_  
Deputy City Attorney

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**CONTRACTOR**

By \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

City of San Diego License No.: \_\_\_\_\_

State Contractor's License No.: \_\_\_\_\_

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: \_\_\_\_\_



**Bid Results**

**Bidder Details**

**Vendor Name** Curtin Maritime Corp.  
**Address** P.O. Box 2531  
 Long Beach, CA 90801  
 United States

**Respondee** Steven Chew  
**Respondee Title** Vice President, Operations  
**Phone** 562-666-6971 Ext.  
**Email** stevec@curtinmaritime.com

**Vendor Type** PQUAL  
**License #** 969007  
**CADIR**

**Bid Detail**

**Bid Format** Electronic  
**Submitted** September 26, 2017 11:15:55 AM (Pacific)  
**Delivery Method**  
**Bid Responsive**  
**Bid Status** Submitted  
**Confirmation #** 117490  
**Ranking** 0

**Respondee Comment**

**Buyer Comment**

**Attachments**

File Title	File Name	File Type
Mission Bay - Contractor's Certification of Pending Actions	K-18-1576-DBB-3 - Contractors Certification_.pdf	CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS
Mission Bay - Personnel Qualifications - CMC	MBC Personnel Quals.pdf	PERSONNEL QUALIFICATIONS
Mission Bay - Bid Bond - CMC	MissionBay_BidBond_SIGNED.pdf	Bid Bond

**Line Items**

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
	<b>Main Bid</b>					
1	Bonds (Payment and Performance)					
	524126	LS	1	\$51,111.00	\$51,111.00	
2	WPCP Development					
	541330	LS	1	\$1,000.00	\$1,000.00	
3	WPCP Implementation					
	237990	LS	1	\$1,000.00	\$1,000.00	
4	Salvage and Relocate Existing Trash Bins and Fire Pits					
	238990	EA	5	\$100.00	\$500.00	

**Bid Results**

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
5	Adjust Existing Sign 238990	EA	2	\$250.00	\$500.00	
6	Mobilization 237110	LS	1	\$385,000.00	\$385,000.00	
7	Field Orders (EOC Type II) AL		1	\$400,000.00	\$400,000.00	
8	Dredge and Disposal at Reuse 237990	CY	90350	\$31.70	\$2,864,095.00	
9	2-foot Paid Overdredge and Disposal 237990	CY	38840	\$14.75	\$572,890.00	
10	Beach Excavation and Reuse 237990	CY	32050	\$31.70	\$1,015,985.00	
	Eelgrass Planting 237990	ACRE	73	\$15,250.00	\$1,113,250.00	
12	Traffic Control (EOC Type I) 237310	AL	1	\$5,000.00	\$5,000.00	
13	Exclusive Community Liaison Services (EOC Type I) 541820	AL	1	\$60,000.00	\$60,000.00	
				<b>Subtotal</b>	<b>\$6,470,331.00</b>	
				<b>Total</b>	<b>\$6,470,331.00</b>	

**Subcontractors**

Name & Address	Description	License Num	CADIR	Amount	Type
<b>E - NOR INNOVATIONS INC</b> 16213 ILLINOIS AVENUE paramount, CA 90723 United States	Traffic Control	931953	1000007079	\$15,000.00	SLBE
<b>MBC Applied Environmental Sciences</b> 3000 Red Hill Avenue Costa Mesa, CA 92626 United States	Eelgrass Transplant Services	B2011013477	1000015643	\$880,000.00	CADIR
<b>McGrath Consulting</b> PO BOX 2488 El Cajon, CA 92021 United States	WPCP Documentation	11MH0281	1000037165	\$1,000.00	ELBE,SDB
<b>Pi Environmental, LLC</b> 1029 Capistrano Drive Oceanside, CA 92058 United States	Consulting Services	17PE1743	1000032719	\$250,000.00	ELBE,SDB,WOSB
<b>eTrac, Inc.</b> 637 Lindero Street San Rafael, CA 94901 United States	Surveying	048758	1000017700	\$65,000.00	