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STAFF REPORT: REGULAR CALENDAR

Application No.:	**6-16-1120**
Applicant:	**City of San Diego**
Agent:	James Arnhart
Location:	Mission Bay Park, San Diego, San Diego County
Project Description:	Dredge approximately 63 acres of bay bottom to restore original design depth, with deposition of all spoils within Mission Bay Park for eel grass mitigation or beach nourishment.
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

Mission Bay Park is the largest municipal aquatic park in the country, and the City of San Diego's proposed maintenance dredging represents one of the largest dredging actions undertaken in Mission Bay. In 2017, a review of Mission Bay bathymetry and sediment dynamics was completed, determining that an estimated 483,880 cubic yards of sediment had accreted in Mission Bay in the ten-year period between 1997 and 2007. The purpose of the project is to improve public access and recreational opportunities in Mission Bay by removing sediment that currently impedes or threatens safe boat access to portions of the bay. The project would restore the dredged areas to the original design elevation from when Mission Bay Park was first created by the City in the 1950's. The dredged material will be used for two purposes, to restore beaches eroded beaches on Crown Point Shores

and northeast Vacation Isle, and to fill subtidal depressions depleted by past dredging projects in Sail Bay and Leisure Lagoon.

Dredging approximately 63 acres of bay bottom will impact approximately 43 acres of eel grass habitat. Eel grass serves as sensitive habitat for invertebrates, fish, and birds, and is considered to be Essential Fish Habitat under federal regulations. Thus, the City has proposed to mitigate the 63 acres of impacts consistent with standards established in the California Eelgrass Mitigation Policy (CEMP) by planting new eel grass beds within Mission Bay. In the event that the planted eel grass fails to achieve a final 1.2:1 mitigation ratio at the end of the 5-year mitigation monitoring period, any shortfall at that time would then be met by crediting the requisite amount from the City's existing eel grass mitigation banks that have not been allocated to other projects by that time.

The mitigation consists of planting eel grass on site, both within the footprint of the proposed dredge areas and within existing borrow pits in Sail Bay in northwest Mission Bay, which were dredged in 1985-1986 for a Commission-approved beach widening project. The dredged sediment removed from other parts of the bay would be deposited in these existing depressions in order to raise the elevation of the bottom to a depth appropriate for eel grass.

Adverse impacts to public access and recreation are expected to be limited as the terrestrial construction staging area is only 1.5-acres and will be located in a vacant portion of City-owned land, with minimal trail closure for when equipment is moved in and out of the site. Beach nourishment activity will not substantially impact public access adversely because only certain segments of the beach are being nourished, and the size of the nourished segments only require 2 – 3 pieces of equipment and 6-9 days of beach closure outside of the busy summer tourist season. Open water recreational activities will not be adversely impacted as no open water area will be closed during the dredging activity.

Turbidity will be addressed through a turbidity control plan that monitors for turbidity plumes during dredging activity and slows, suspends, or relocates dredging activity should established thresholds be crossed.

Special Condition No. 1 requires the applicant to adhere to final approved project plans and construction staging and storage plans during the expected 5-month duration of the project to ensure that only the proposed areas – and the habitat within – are impacted and that public access is not adversely affected while doing so. **Special Condition No. 2** further regulates the beach nourishment aspect of the project so as to minimize impacts to public use of the beach. **Special Condition No. 3** details the construction water quality measures that should be undertaken while the dredging is occurring so as to minimize the risk of harmful discharges or substantial turbidity negatively affecting the bay waters and recreational users therein. Finally, **Special Condition No. 4** requires the City to adhere to the approved final eel grass mitigation and monitoring plan to identify the manner of restoration and the benchmarks that must be met by the end. **Special Condition No. 5** informs the City that by accepting this permit they are also accepting the risk of hazard inherent in such development.

Commission staff recommends **approval** of coastal development permit application 6-16-120 as conditioned.

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Exhibit 4 – Project Area Site Map
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Exhibit 7 – Map of Past Dredging

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-16-1120 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves coastal development permit 6-16-1120 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Submittal of Final Plans**

   (a) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit, for the review and written approval of the Executive Director, two full-size sets of the following final plans:

      i. Final project plans that conform with the plans submitted to the Commission, titled "Mission Bay Navigational Safety Dredging" submitted to the Commission on December 21, 2016,

      ii. Final construction staging and storage plans that conform with the plans submitted to the Commission, titled "Mission Bay Navigational Safety Dredging" submitted on December 21, 2016, and

      iii. Final animal avoidance plans that conform with the plans submitted to the Commission, titled Mission Bay Navigational Safety Dredging Project Green Sea Turtle Biological Assessment and Marine Mammal Impact Avoidance and Contingency Plan dated June 2017.

   (b). The permittee shall undertake development in conformance with the approved final plans unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally required for any proposed minor deviations.

2. **Beach Nourishment Timing of Construction**

   (a) No deposition of beach material shall take place from Memorial Day weekend to Labor Day of any year.

   (b) Deposition of beach material shall not result in closure (either full or partial) of the following beach areas: Crown Point Park during weekends and Ski Beach Park during weekends.

3. **Construction and Pollution Prevention Plan.**

PRIOR TO CONSTRUCTION the applicant shall submit, for the review and written approval of the Executive Director, a final Construction and Pollution Prevention Plan prepared and certified by a qualified licensed professional. The final Plan shall demonstrate that all construction complies with the following requirements:

(a) Protect Public Access. Construction shall protect and maximize public access, including by:

i. Construction shall not occur from Memorial Day weekend to Labor Day of any year unless, due to extenuating circumstances (such as tidal issues, extensive delays due to severe weather, or other environmental concerns), the Executive Director provides written authorization for such work.

ii. Staging and storage of construction equipment and materials (including debris) shall not take place on public trails or public parking spaces, except for a maximum of five (5) public parking spaces adjacent to the beach nourishment areas while that particular segment of beach is being nourished. Staging and storage of construction equipment and materials shall occur in inland areas at least 50 feet from coastal waters, drainage courses, and storm drain inlets, if feasible. Upon a showing of infeasibility, the applicant may submit a request for review and written approval to the Executive Director for staging and storage of construction equipment and materials closer than 50 feet from coastal water, drainage courses, and storm drain inlets. Construction is prohibited outside of the defined construction, staging, and storage areas.

iii. All construction methods to be used, including all methods to keep the construction areas separated from public recreational use areas (e.g., using unobtrusive fencing or equivalent measures to delineate construction areas), shall be clearly identified on the construction site map and described in the Plan.

iv. All beaches, beach access points, and other recreational use areas impacted by construction activities shall be restored to their pre-construction condition or better within three days of completion of construction.

(b) Fueling and maintenance of construction equipment. Fueling and maintenance of construction equipment and vehicles shall be conducted off site if feasible. Any fueling and maintenance of mobile equipment conducted on site shall not take place on a beach, and shall take place at a designated area located at least 50 feet from coastal waters, drainage courses, and storm drain inlets, if feasible (unless those inlets are blocked to protect against fuel spills). The fueling and maintenance area shall be designed to fully contain any spills of fuel, oil, or other contaminants. Equipment that cannot be feasibly relocated to a designated fueling and maintenance area (such as dredges) may be fueled and maintained over-water, provided that procedures are implemented to fully contain any potential spills.

(c) Dredge Operation BMP's. Dredging shall utilize the following minimum practices.

i. Dredging must be conducted to remove dredge material and not stockpile material on the floor of Mission Bay.

ii. 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.

iii. The swing radius of unloading equipment must be controlled to prevent spillage of dredged sediments back into the water.

iv. 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.

v. 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.

vi. 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.

vii. 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 coastal waters.

(d) Receiving Water Visual Observation Monitoring. Visual monitoring metrics and numeric monitoring standards shall be based on deviations from ambient levels. Adaptive management measures must be employed if either the visual monitoring or the sampling indicates a water quality threshold has been exceeded. The Applicant must conduct visual observation monitoring of the Project activities in Mission Bay, prior to, during, and after each period of Project construction. If the plume extends more than 500 feet down current from the dredge then adaptive management measures shall be used to control turbidity generation as specified in subsection (f) of this Special Condition. If such measures are not effective at reducing the scale of the plume back to less than 500 feet within an hour, then work shall stop or move to another location until water quality conditions improve. During neap tides, it may be necessary to relocate work to portions of the shoals where the tidal flow spread of turbidity is minimized.

i. 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.

ii. Field Documentation. All visual observations shall be recorded throughout Project construction activities. 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.

(e) 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. Adaptive management measures must be employed if either the visual monitoring or the sampling indicates a water quality threshold has been exceeded. The monitoring plan shall contain the following elements:

i. 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 ±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, to ensure that 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.

ii. Water Quality Standards. Water Quality Objectives for pH, DO, and turbidity shall meet the following standards:

A. Changes in normal ambient pH levels shall not exceed 0.2 units in waters with designated marine (MAR), estuarine (EST), or saline (SAL) beneficial uses. Changes in normal ambient pH levels shall not exceed 0.5 units in fresh waters with designated cold freshwater habitat (COLD) or warm freshwater habitat (WARM) beneficial uses. In bays and estuaries, the pH shall not be depressed below 7.0 nor raised above 9.0.

B. Dissolved oxygen levels shall not be less than 5.0 mg/l in inland surface waters with designated MAR or WARM beneficial uses or less than 6.0 mg/l in waters with designated COLD beneficial uses. The annual mean dissolved oxygen concentration shall not be less than 7 mg/l more than 10% of the time.

C. Natural Turbidity Maximum Increase: 0-50 NTU, 20% over natural turbidity level; 50-100 NTU; greater than 100 NTU, 10% over natural turbidity level

iii. 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 ±0.5 feet. Water quality shall be monitored using instrumentation capable of measuring DO, pH, and turbidity (in nephelometric turbidity units (NTU's)).

iv. 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 subsection (e)ii of this Special Condition are observed or measured after 3 consecutive days of monitoring.

v. 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.

vi. 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

vii. DO, pH, or turbidity limitations. The point of compliance with these receiving water limitations shall 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), 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.

(f) Response Actions to Monitoring Results. In the event that visual observations or water quality monitoring demonstrate an exceedance of water quality standards, the Applicant shall implement the additional or enhanced operational or engineering BMPs described below:

i. Adjust the sequence and/or speed of dredging and disposal operations;

ii. Reposition dredge operations in such a way as to ensure future exceedances do not occur;

iii. Modify, either on a temporary or permanent basis, dredge equipment (such as the dredging bucket size or type).

(g) Construction Coordinator. A construction coordinator shall be designated who may be contacted during construction should questions or emergencies arise regarding the construction. The coordinator's contact information (including, at a minimum, a telephone number available 24 hours a day for the duration of construction) shall be conspicuously posted at the job site and readily visible from public viewing areas, indicating that the coordinator should be contacted in the case of questions or emergencies. The coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

(h) Notification. The permittee shall notify planning staff of the Coastal Commission's San Diego District Office at least three working days in

advance of (1) commencement of construction or maintenance activities, and immediately upon completion of construction or maintenance activities, and (2) of any anticipated changes in the schedule based on site conditions, weather or other unavoidable factors.

(i) Progress Reports. The permittee shall submit weekly reports reflecting progress and status of the project, including an identification of any outstanding issues that may have arisen since the last progress report, or are anticipated to arise in the foreseeable future.

4. **Final Eelgrass Mitigation Plan**

(a) PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director, two (2) copies of a final eelgrass mitigation plan for the replacement of eelgrass adversely impacted by the project. The plan shall be prepared in consultation with the California Department of Fish and Game and the National Marine Fisheries Service (NMFS). The plan shall be prepared consistent with the requirements identified below, and additionally following the guidelines of the California Eelgrass Mitigation Policy and Implementing Guidelines dated October 2014 (CEMP). The latter includes but is not limited to those guidelines focused on: eelgrass mapping; surveying; impact determinations; mitigation site selection, size, and methods; and, monitoring and success criteria. The plan shall provide that:

i. All direct impacts to eelgrass and indirect impacts to eelgrass (*e.g.*, shading or scour) shall be mitigated at a minimum final ratio of 1.2:1 (mitigation: impact), except that impacts to eel grass within the Sail Bay borrow pit reuse sites shall be mitigated at a final ratio of at least 1.45:1 unless the pre-construction survey shows that a higher ratio is warranted;

ii. Adverse impacts to eelgrass shall be mitigated in-kind, on-site to the maximum extent feasible and, for any portion that cannot feasibly be mitigated on-site, off-site mitigation shall be required. Adverse impacts include any impact that reduces the quality or quantity of eel grass habitat, including direct or indirect physical, chemical, or biological alterations of the waters or substrate. The final location(s) of all on-site and off-site mitigation shall be specifically identified;

iii. Inventories of existing and historical information (including maps) shall accompany detailed descriptions for each of the following sites:

A. Eelgrass beds within the approved construction site plus a 10m buffer area, including the areas identified as susceptible to potential eelgrass disturbance, and which should also be clearly indicated on the maps;

B. Eelgrass beds, if any, within the mitigation site(s);

C. Eelgrass beds selected as the reference site(s);

iv. The proposed mitigation methods shall be described in detail, including but not limited to specification of the mitigation approach (*e.g.*, recolonization, transplant via bare-root bundles, seed buoys, or transplant frames); whether the mitigation site requires any sort of preparation; the sources, quantities, and spacing of donor eelgrass material; and, time estimates for recolonization or transplant activities to be completed.

v. Prior to commencement of construction of the portions of the approved project that would have unavoidable direct impacts on eelgrass, the eelgrass that would be directly impacted shall be transplanted to the mitigation site(s). Any additional mitigation necessary to achieve the milestones described in subdivision (a)vii of this Special Condition should also be considered for implementation prior to the commencement of construction, in order to minimize temporal loss of eelgrass ecosystem function.

vi. At minimum, a monitoring plan for the mitigation and reference sites shall follow CEMP guidelines, and specify: the criteria and process for reference site selection; sampling and/or census methods to be used including frameworks, spatial resolutions, frequencies, and error; methods for statistical assessment; and, any other relevant details such that a specialist unfamiliar with the sites could readily interpret and carryout the plan. Additional metrics (*e.g.*, epifaunal load, blade height or width, qualitative photography) may also be employed and should be thoroughly described.

vii. Construction schedules shall be provided, including specific commencement and completion dates for all work, with attention to the regional eelgrass growing seasons as described in the CEMP.

viii. The CEMP-recommended annual performance milestones shall guide achievement towards the minimum final mitigation goal, attainment of 100 percent coverage of eelgrass and at least 85 percent density of reference site(s) over not less than 1.2 times the area of the impact site within three years of completion of the

initial mitigation activities, and to sustain that goal for an additional two years thereafter. If achievement of this performance milestone schedule is delayed for any reason, monitoring shall continue until the minimum final mitigation goal has been sustained for an additional two years.

ix. Reports shall be submitted to the Executive Director, as follows:

A. Annually, with description of the results of the 0, 12, 24, 36, 48, and 60-month (post-planting) performance evaluations at the mitigation site(s), including the areal extent, percent coverage, and density of eelgrass at the mitigation and reference site(s), and any relevant observations, recommended maintenance (including replanting measures), or other adaptive management strategies recommended for consideration;

B. At the end of the proposed five-year period, a comprehensive report describing the results of the plan in detail, similar to that described above for the annual reports but with reference to the overall success of the mitigation effort;

x. A follow-up mitigation program shall be proposed if the original program is wholly or partially unsuccessful. Prior to implementation, this follow-up program shall be at least reviewed and approved by the Executive Director in writing, and may require an amendment to this permit.

The permittee shall undertake development in conformance with the approved final plans unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally-required for any proposed minor deviations.

(b) **Pre-Construction Eelgrass Survey**. A valid pre-construction eelgrass survey (for *Zostera marina* and *Z. pacifica*) shall be completed for the project site and a 10m buffer area by the Permittees during the period of active eelgrass growth (this period varies in different regions; consult the CEMP for the relevant season in the project area). The pre-construction survey shall be completed no more than 60 days prior to the beginning of construction and shall be valid until the next period of active growth. If any portion of the project is subsequently proposed to occur in a previously unsurveyed area, a new survey is required during the active growth period for eelgrass in that region and no more than 60 days prior to commencement of work in that area. The eelgrass survey and mapping shall be prepared in full compliance with the CEMP, and in consultation with the National Marine Fisheries Service (NMFS) and California

Department of Fish and Wildlife (CDFW). If side-scan sonar methods will be used, evidence of a permit issued by the California State Lands Commission (CSLC) for such activities shall also be provided prior to the commencement of survey work. The applicant shall submit the pre-construction eelgrass surveys for review and approval by the Executive Director within five (5) working days of completion of each eelgrass survey and in any event, no later than fifteen (15) working days prior to commencement of any development. If eelgrass surveys identify any eelgrass within the project area, which may be potentially impacted by the proposed project, the Permittees are required to complete post-project eelgrass surveys consistent with subsection C (below).

(c) **Post-Construction Eelgrass Survey**. If any eelgrass is identified in the project site or the 10m buffer area by surveys required in subsection (b) of this Special Condition, 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, the applicant shall survey the project site and the 10m buffer area to determine if any eelgrass was adversely impacted. The survey shall be prepared in full compliance with the CEMP adopted by the NMFS, and in consultation with the CDFW. If side-scan sonar methods are to be used, evidence of a valid permit from CSLC must also be provided prior to the commencement of each survey period. The applicant shall submit the post-construction eelgrass survey for the review and approval of the Executive Director within thirty (30) days after completion of the survey. If any eelgrass has been adversely impacted, the applicant shall replace the impacted eelgrass at a minimum final 1.2:1 (mitigation:impact) ratio on-site, or at another location, in accordance with the CEMP. Any exceptions to the required 1.2:1 minimum final mitigation ratio found within the CEMP shall not apply. Based on past performance of eelgrass mitigation efforts, in order to achieve this minimum, the appropriate regional initial planting ratio provided in the CEMP should be used. Implementation of mitigation to ensure success in achieving the minimum final mitigation ratio (1.2:1) shall require an amendment to this permit or a new coastal development permit unless the Executive Director provides a written determination that no amendment or new permit is required.

(d) **Pre-Construction *Caulerpa taxifolia* Survey**

i. Not more than 90 days nor less than 30 days prior to commencement or recommencement of any development authorized under this coastal development permit (the "project"), the applicant shall undertake a survey of the project area and a buffer area at least 10 meters beyond the project area to determine the presence of the invasive green alga, *Caulerpa taxifoli*a. The survey shall include a visual examination of the substrate.

ii. The survey protocol shall be prepared in consultation with the Regional Water Quality Control Board, the California Department of Fish and Wildlife, and the National Marine Fisheries Service (see http://www.westcoast.fisheries.noaa.gov/habitat/aquatic_invasives/caulerpa_taxifolia.html).

iii. Within five (5) business days of completion of the survey, the applicant shall submit the survey for the review and written approval of the Executive Director; and to the Surveillance Subcommittee to the Southern California Caulerpa Action Team (SCCAT). The SCCAT Surveillance Subcommittee may be contacted through William Paznokas, California Department of Fish & Wildlife (858-467-4218/William.Paznokas@wildlife.ca.gov) or Bryant Chesney, National Marine Fisheries Service (562-980-4037/Bryant.Chesney@noaa.gov).

(e) If *C. taxifolia* is found within the project or buffer areas, the applicant shall not proceed with the project until 1) the applicant provides evidence to the Executive Director that all *C. taxifolia* discovered within the project and/or buffer area has been eliminated in a manner that complies with all applicable governmental approval requirements, including but not limited to those of the California Coastal Act, or 2) the applicant has revised the project to avoid any contact with *C. taxifolia*. No revisions to the project shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director provides a written determination that no amendment is legally required

5. **Assumption of Risk, Waiver of Liability and Indemnity**

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards, including but not limited to waves, storms, flooding, landslide, erosion, and earth movement, many of which will worsen with future sea level rise; (ii) to assume the risks to the permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The proposed project would dredge the bottom of portions of Mission Bay back to the original survey elevation of approximately -8 feet Mean Low Low Water (MLLW) when Mission Bay Park was first constructed in the late 1950's. Approximately 63.36 acres of dredging would occur as part of this project, creating up to 220,850 cubic yards of dredged material. The dredged material will be used for two purposes, to fill approximately 19.47 acres of subtidal depressions depleted by past dredging projects in Sail Bay and Leisure Lagoon in northwestern and eastern Mission Bay Park, respectively, for habitat restoration as well as for beach nourishment along portions of Crown Point and Vacation Isle in central Mission Bay Park. Both the filled borrow pits and the newly dredged areas will be planted to develop eel grass habitat as mitigation for the existing eel grass impacted by the proposed dredging.

In 2017, a review of Mission Bay bathymetry and sediment dynamics was completed, determining that an estimated 483,880 cubic yards of sediment had accreted in Mission Bay in the ten-year period between 1997 and 2007, equating to an average of 0.16-inch-per-year accretion rate over the 2,299 acres of bay waters. The sediment accretion was not uniform, but instead concentrated in certain parts of the bay such that the accretion eventually formed navigational hazards. The purpose of the dredging is to remove these hazards and improve recreational boating opportunities in Mission Bay.

The project work area itself includes approximately 82.83 acres of bay waters and sandy beach. Temporary staging areas consisting of two on-water staging locations for storage of on-water equipment and berthing of work vessels will occupy 2.5 acres of bay waters and 1.55 acres of vacant upland adjacent to the South Shores public launch will host office trailers, equipment storage, contractor vehicle, and related activity. The City is planning on starting dredging activities in November 2017 and be completed by March 2018, a 5-month construction period, with additional eel grass planting and monitoring to continue beyond then.

Mission Bay Park is primarily unzoned and is a dedicated public park in the City of San Diego. While the park has a certified Mission Bay Park Master Plan, the subject site is located within the City of San Diego in an area of deferred certification, where the Commission retains permit authority and Chapter 3 of the Coastal Act remains the legal standard of review.

B. PROJECT HISTORY

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. 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 areas were created 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 marshland from the San Diego River delta. Between 1948 and 1951 the San Diego River had been confined by the construction of northern and southern levees by the Army Corps of Engineers, thus ceasing its direct discharge of substantial amounts of sediment to Mission Bay. By 1955 offshore jetties were constructed to the north of the San Diego River mouth and north of the present day Mission Bay entrance channel. The majority of the work constructing modern-day Mission Bay was completed by 1963. Mission Bay was the first and remains the largest west coast bay constructed for recreational uses.

There have been numerous major and minor dredging and bay modification projects since 1963 [Exhibit 7], including the dredging of the Tecolote Creek Inlet to remove sediment in approximately 1970, the Army Corps of Engineers dredging of the federal entrance channel in approximately 1983, alteration of the Quivira Basin wave barrier and cutting a relief weir in the southern jetty of the entrance channel by the Army Corps of Engineers in the mid-1980s.

Also in the mid-1980's, the City implemented the Sail Bay improvement project that removed private development from public lands around the shore of Sail Bay and expanded the public beach area with sand dredged from borrow pits in central Sail Bay. The eel grass impacts associated with the beach widening were mitigated by restoration planting off the new beach area, while the 12-acre fill of the bay waters from the beach widening was mitigated by the creation of new open bay area at the South Shores embayment south of the South Pacific Channel and east of SeaWorld, completed in 1994. The dredging of the Fisherman's Channel and replacement of the Ingraham Street bridge with a broader span design contributed to increased sand levels and shoaling in west Mission Bay and was dredged out as part of the Mission Bay shoreline stabilization project of 1995. Additional dredging projects include reconnecting SeaWorld's 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 work to create Crown Point Shores Intertidal Mitigation Areas (now Stribley Marsh), dredging and redesign of West Ski Island in 2000, and federal channel maintenance dredging by the Army Corps of Engineers in 2010-2011.

C. PUBLIC ACCESS

Section 30210 of the Coastal Act states:

> *In carrying out the requirements of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30211 of the Coastal Act states:

Development shall not interfere with the public's right of access to the sea where acquired through use of legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212(a) of the Coastal Act states:

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile resources, (2) adequate access exists nearby, or, (3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

Section 30220 of the Coastal Act states:

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Section 30224 of the Coastal Act states:

Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water dependent land uses that congest access corridors and precludе boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

Mission Bay Park is the largest municipal aquatic park in the country, and is a popular destination for recreational boating activities. Varying water depths in the bay have historically limited the types of vessels that can navigate the area [Exhibit 3]. 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. 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 sports vessels, medium-sized dinner cruise barges, and smaller recreation 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. Open speed areas are located in northwestern Sail Bay and throughout most of Fiesta Bay. Controlled waters restricted for personal water craft and competition ski boards 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 personal water craft. Small bay fishing boards often fish the currents through the bridges during changing tides.

Despite minor dredging projects that have occurred in Mission Bay over the years, the accretion of sediment has impacted recreational boat safety and access in Mission Bay. Currently, portions of the open water are closed off by the City Lifeguards due to the risks of boating impacting the developing shoals, impeding recreational traffic and posing a risk to public safety. Thus, the City developed a comprehensive proposal to dredge Mission Bay to improve public access and recreational opportunities in Mission Bay by removing sediment that currently impedes or threatens safe boat access to portions of the bay.

By evaluating depth range maps, water uses, speed zones, and incident reports, and response call history, City Lifeguards identified areas of the bay that currently pose navigational safety hazards. Not all areas of the same depth are considered to be of equal concern. Controlled or low speed areas navigated only by shallow draft vessels support a continuation of shallower waters compared to areas in open speed zones or where deep draft vessels could 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. Additionally, consideration was given to future plans under the Mission Bay Master Plan, and thus shoaling in areas designated for future marshland restoration is not proposed for dredging.

In total, the City originally designated 15 areas for maintenance dredging, identified as Dredge Areas 1 – 15, with some areas supporting multiple small satellite dredge areas [Exhibit 4]. However, the City subsequently refined the project to exclude Dredge Area 8 at the southwest tip of the Crown Point area of Pacific Beach because the potential navigation hazard there exists due to the existing beach area eroding back, not from the accumulation of a shoal as with the other dredge areas. Thus, dredging in area 8 would not be restoring the original Mission Bay Park design. Another small segment – area 5B – was also removed from the City's project due to not fully conforming to the project's current maintenance goals.

Project staging would occur in proximity to the South Shores public launch ramp and will be located on a portion of vacant City-owned property [Exhibit 2]. Access to the staging area would be taken from the south shores parking lot located off SeaWorld Drive. Existing public parking areas would not be utilized for equipment storage or laydown. Staging would also take place at two on-water staging locations for storage of on-water equipment and berthing of work vessels that will move around the bay waters as the various designated dredge areas are worked on.

There is currently an existing pedestrian path that follows the shoreline north of the South Shores public launch facility that encompasses the above-mentioned vacant City-owned upland parcel and that is proposed to be used for a portion of the construction staging and storage. The traffic controls during the dredging work include temporary park pathway diversions or closures lasting no more than one hour so as to move equipment from the staging area to the launch facility and vice versa. The only trail closures anticipated are a temporary closure of the South Shores trail by construction personnel if and when equipment needs to be craned onto or off of a floating dredge barge. Over the course of

the proposed maintenance dredging program, it is anticipated that the cumulative closure time would equal less than 24 hours.

In addition to improving navigation, the project is expected to improve recreation by depositing sand on three beaches along Crown Point and Vacation Isle in central Mission Bay Park [Exhibit 4]. These beaches, as with the other beaches in Mission Beach, are regularly groomed by the City of San Diego, with equipment moving sand upland to maintain the original beach profile. Despite this, some sand does erode seaward into the intertidal zone, beyond the reach of the grooming, where it contributes over time to the shoaling and reduces beach width. The beach segments designated for nourishment will receive up to 83,000 cubic yards – approximately a third – of the total dredge spoils to restore them to their original design profiles, with the rest of the dredge spoils being used for in-water habitat restoration.

Work on the three receiver beaches receiving a portion of the dredge material for beach nourishment is expected to take no more than 6 – 9 days for each beach, depending on the tides. Only the segment of beach that is being actively worked on would be closed through the temporary placement of barricades and flagging. Equipment on the beaches would consist of a bulldozer and excavator to move material up onto the beach from the shoals and redistribute the sand back to upland beach grades. No more than three pieces of equipment are expected to be active on the beach at any given time due to the small segment sizes being nourished. However, this beach work would require temporary drop offs of equipment by trucks and would occupy up to 5 public parking spaces in the adjacent parking lots during work activity due to the distance from the main construction staging area at the South Shores public launch facility. Because the parking spaces would only be used during the relatively short duration of the nourishment work and will occur outside of the busy summer season, the use of up to 5 parking spaces in this manner is unlikely to result in substantial adverse impact to public access.

On-water work is not proposed to involve any closure of water area, although a temporary 5-mile per hour (mph) transit speed within 300 feet of construction activities is being requested by the City Lifeguards and the United States Coast Guard. This is not expected to have any significant adverse impact on recreation.

In summary, the proposed maintenance dredging will increase the utility of Mission Bay Park above its current levels by restoring portions of the Bay to its original design depths, and widening three beaches. specifications. The proposed work will occur outside of the summer season to avoid impacts to the busy summer tourist season, when park visitation and recreational water activities are most common.

To ensure that impacts to public access are minimized during the maintenance dredging, restoration, and beach nourishment activities, **Special Condition No. 1** requires the City to adhere to an approved construction staging and storage plan that avoids the use of public parking and right-of-ways in the staging of their equipment, as well as minimizes the disruption of recreational water traffic around the dredge equipment through speed limits rather than water closures. **Special Condition No. 2** regulates the beach nourishment aspects of the project by prohibiting its occurrence during the busy summer

months and limiting any closures to the minimum area necessary for the placement of sand. Because the proposed work will occur on open water and shoreline areas that experience tidal action and other potential hazards, **Special Condition No. 5** informs the City that by accepting this permit, they are accepting the risk inherent in such work. Therefore, as conditioned, the project is consistent with the public access and recreational policies of the Coastal Act.

D. HABITAT IMPACTS

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the maritime environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy population of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effect of waste water discharges and entrainments, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30233 of the Coastal Act states in relevant part:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities;*
>
> *2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basin, vessel berthing and mooring areas, and boat launching ramps;*

3) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities;*

4) *Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

5) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas;*

6) *Restoration purposes;*

7) *Nature study, aquaculture, or similar resource dependent activities*

(b) Dredging and spoils shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provision of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary…

Section 30240(b) of the Coastal Act states:

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat recreation areas.

While the project would have a positive impact on public access and recreation, it also has the potential to significantly impact a variety of biological resources. The dredging will directly impact 42.93 acres of eelgrass. Construction activities can disrupt sensitive bird and aquatic creatures, and dredging can disrupt benthic organisms. The specifics details of each of these potential impacts are discussed below. The proposed maintenance dredging and disposal project must be also examined for consistency with Section 30233. Under this section, dredging and filling of open coastal waters, including disposal of dredged materials, is limited to those cases where the proposed project is an allowable use, is the least damaging feasible alternative, and where mitigation measures are provided to minimize environmental impacts. The dredging and disposal of dredged materials from the maintenance of navigation channels is an allowable use under Section 30233(a)(2), for the maintenance and restoration of navigational channels. The proposed disposal locations are on beaches in Mission Bay and as discussed in greater detail in

Section E Water Quality, below, are the least damaging feasible alternatives for disposal of the clean, sandy dredged materials. As discussed in the following sections of this report, mitigation measures are incorporated into the project where necessary to protect coastal resources. Therefore, the Commission finds that the proposed maintenance dredging project is consistent with the allowable use, alternatives, and mitigation tests contained in the dredge and fill policy of Section 30233.

Eel Grass

Much of the shallow shoal areas that have built up in Mission Bay over the decades are colonized by eel grass. Eel grass is a native marine vascular plan indigenous to the soft bottom bays and estuaries of the northern hemisphere. The species is found from middle Baja California and the Sea of Cortez to northern Alaska along the west coast of North America and is common in healthy shallow bays and estuaries. Common eel grass has a global distribution within the northern hemisphere and is geographically widespread along California. However, it is limited in overall abundance due to extremely limited suitable habitat, consisting of clear water in shallow, protected soft-bottom bays and estuaries.

Eel grass plays many roles within the coastal bays and estuary ecosystems. It clarifies water through sediment trapping and stabilization. It also provides benefits of nutrient transformation and water oxygenation. Eel grass serves as the primary producer in a detrital-based food web and is further directly grazed upon by invertebrates, fish, and birds. Eel grass provides physical structure to the community and supports epiphytic plants and animals that in turn are grazed upon by larval and juvenile fish, other invertebrates, and birds. Eel grass is a nursery area for many commercially and recreationally important fish and shellfish species.

Eel grass is considered to be an important nursey habitat for several species and is considered to be Essential Fish Habitat under federal regulations. Eel grass surveys have previously been conducted along the shoreline of Mission Bay in 1986 and the entire bay in 1988, 1992, 1997, 2001, and 2013 [Exhibit 6]. In the most recent summer 2013 survey [Exhibit 5], there were 979 acres of eel grass within Mission Bay. The two most common eel grass species were common eel grass and Pacific eel grass, with the former constituting 99.7% of the eel grass and the latter found mainly at the bay entrance. The extent of eel grass in general is greatest with the better-flushed westerly portions of the bay. Within the eastern portion of the bay, eel grass is more extensive within more open waters such as Fiesta Bay that are subject to strong tidal and wind driven circulation. A study submitted by the City found that eel grass grows to a maximum verifiable depth of over 20 feet in Mission Bay, with the deeper depths containing the Pacific eel grass and being located in the entrance channel of the bay. However, 99.9% of all the Mission Bay eel grass occurs between 0 and 14.5 feet MLLW.

As a result of the maintenance dredging, 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). This policy requires mitigation of impacts to eel grass through the use of either pre-developed

eelgrass mitigation, which can be used for mitigation at a 1:1 ratio, or mitigation implemented coincident with impacts, which requires an initial planting ration of 1.38:1, with the goal of a final successful establishment of new eel grass at a 1.2:1 ratio.

The City is proposing to fully mitigate the eel grass impacts by planting new eel grass beds within Mission Bay, and is not proposing to use the existing mitigation banks – estimated at approximately 14 acres in 2010 – the City maintains elsewhere in Mission Bay. However, the banked eel grass is proposed to serve as a secondary, backup source of mitigation in the event that at the end of the 5-year mitigation monitoring period, the planted eel grass fails to achieve a final 1.2:1 mitigation ratio. Any shortfall at that time would then be met by crediting the requisite amount from the existing eel grass mitigation banks that have not been allocated to other projects by that time.

The proposed eel grass mitigation sites consist of two main areas in Mission Beach: the existing subtidal borrow pits located in Sail Bay and Leisure Lagoon, and the newly proposed dredge areas. The existing borrow pits in Sail Bay were excavated in 1986-1986 as part of a Sail Bay improvement project, and consist of several pits up to -12 feet MLLW in central Sail Bay that to date have not filled in through natural tidal action. The proposed fill area in Leisure Lagoon was dredged back when Mission Bay was first constructed and is a near-shore recreational swim area popular with families due to its sheltered topography in relation to the rest of Mission Bay Park.

To best develop the eel grass mitigation sites at the borrow pits, fill 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 eel grass restoration. However, by placing it first in the bottom of the reuse sites, it will be contained by the borrow pit walls and allow subsequent sands to be placed to a higher elevation. Because the fines from Dredge Area 12 are very compressible, once they are buried at the borrow pits there is expected to be some rapid, yet minor, compression and related elevation drop in the fill, after which the mitigation eel grass will be planted. Next, sandy sediments from other dredge sites would be placed on top of the Dredge Area 12 materials to raise the bottom up to elevation suitable to support eel grass. The phasing of fills would result in eel grass rhizome rich sand being placed in the top layer of the fill in order to enhance potential for vegetative recovery of eel grass concurrently with providing increased organics with the sediment.

As the basins are filled, a gap will be retained to serve as a marginal slump zone between the edge of the pit and the borrow pit rim. This trough will fill with sediment through both sediment flow and slumping and spread of the initial fill and will protect eel grass on the flat bay floor from overrun by fill sediments. However, in the event that any eel grass burial outside of the borrow pit rim occurs due to slumping, it will be treated as a project impact subject to the 1.2:1 mitigation ratio.

Currently, some eel grass grows intermittently over the existing borrow pit rim and onto the borrow pit slopes. During periods of extremely clear water, such as during a drought when inflows and the detritus they bring with them lessen in volume, eel grass can even

grow in the bottoms of the borrow pits as a result of seedling germination and survival through the summer season. Both the slopes and floor of the borrow pit support intermittent occurrence of eel grass that is highly variable from year to year and generally does not persist between years.

Nevertheless, based on bay-wide survey results, eel grass cover within the northern Sail Bay borrow pits has occurred during one of the past six eel grass surveys (16.7% of the surveys). As a result, at the request the National Marine Fisheries Service, the City modified the dredging project such that the mitigation value of eel grass restoration within the borrow pit must be appropriately discounted to account for the fact that the borrow pit occasionally supports eel grass functions, and thus, not all of the mitigation performed at these locations can be considered “new.”. The mitigation value of the borrow pits is being addressed through the use of the Wetland Mitigation Ratio Calculator that is used within the CEMP to support mitigation ratios. In the calculator, the parameter that represents the existing level of function of a mitigation site as a percentage of impacted eel grass was set to 16.7 percent for the area of the borrow pit only. This results in a mitigation ratio of 1.71:1 as a base target and a successful mitigation need of 1.45:1 instead of the 1.2:1 standard within the CEMP for each acre of eel grass impact offset by restoration within the borrow pits. .

Work will be completed in a generally east to west direction, with finer sediments and sands from sites supporting less eel grass 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, eel grass restoration will commence at the dredge and reuse sites progressing in a manner that follow the dredging and reuse site development. This would result in the Fiesta Bay sites being competed early in the project and the 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 in the warmer spring months. Work in the speed controlled areas at Leisure Lagoon and west Mission Bay are more readily compatible with recreational use due to smaller work areas being demarcated as the planting progresses.

Under the planned transplant schedule, work would commence concurrent with the later phases of dredging in the spring when the start of the high growth period commences. Work would continue through the summer of the first season following planting; transplanting is expected to require seven months to complete (excluding unforeseen events).

Because the final eel grass impacts as defined under the California Eelgrass Mitigation Policy (CEMP) are to be determined through pre-dredging and post-dredging surveys and eel grass varies somewhat in distribution, there is the possibility that some adjustments may be required in the final fill positioning for the reuse areas to best serve the intended mitigation function. However, in no instance will the reuse areas expand beyond the existing borrow pit boundaries or above specified elevations.

Thus, the eel grass that will be directly impacted within Mission Bay will be able to be restored completely within the bay's waters using the same material that currently exists in the bay.

Sensitive Species

As documented in the draft Mitigated Negative Declaration of February 15, 2017, there were no sensitive species observed within the project sites during the field surveys, but the sites are expected to be seasonally used by sensitive species. Species identified as protected, rare, sensitive, threatened, or endangered by the U.S. Fish & Wildlife Service, National Marine Fisheries Service, or California Department of Fish & Wildlife that may be expected in the project area at various times include three bird species, two marine mammals, and one reptile, all marine species.

California brown pelican and double crested cormorant are protected at nesting locations and communal roosts, neither of which is present within the project area. While these species occasionally forage in the water and load along the bay, these activities are not dependent on the specific areas proposed to be dredged or nourished, and thus will have ample opportunity to continue to do so elsewhere in Mission Bay during the dredging operation, which will occupy only 2.5 acres of open water at a time.

California least terns do forage for small fish within the project area during summer months, with the nearest least tern nesting colonies to project dredging areas located at Mariner's Point and the FAA Island, approximately 0.45 miles and 0.36 miles from the nearest dredge sites, respectively. Temporary turbidity during dredging will occur locally around the dredge site. However, dredging will be occur outside of the least tern breeding season and is expected to be completed by March 2018, before the least tern nesting season begins. In the event that dredging activity does extend beyond March, less than 1% of the bay area would be impacted by turbidity because of the 500 foot radius limit commonly placed on project-driven turbidity plumes.

The City composed a June 2017 "Green Sea Turtle Biological Assessment and Marine Mammal Impact Avoidance and Contingency Plan" to address potential impacts to sea turtles and marine mammals in the project area. Special status species that have a low to moderate potential to occur in the study area include two marine mammals, specifically the California sea lion and harbor seal, disturbance of which is prohibited by the Marine Mammal Protection Act. No breeding, haul out, or loafing areas for these mammals occur within the project area. California sea lion and harbor seals forage throughout Mission Bay, but are mainly observed near the entrance to the bay and adjacent to the fishing docks and landings, and as such are uncommon visitors to the dredge areas farther into Mission Bay.

Regarding reptiles, only one marine reptile, the green sea turtle, has been observed in Mission Bay. While green sea turtles are herbivores that feed mainly on algae and eel grass, the resident population in San Diego is observed in San Diego Bay, not Mission Bay. South San Diego Bay supports an estimated 16 to 61 individual turtles, whereas

Mission Beach does not support an established resident population of turtles. Historically turtles were reported in Mission Bay in newspaper accounts from 1872 through 1903, but reports in the San Diego area disappeared until the 1960s when they were again reported in San Diego Bay. Within Mission Bay, the National Marine Fisheries Service has provided data for turtle stranding since 1950, which includes 8 reported strandings of 2 live turtles and 6 deceased turtles, with an additional report from a fisherman in 2016. While SeaWorld San Diego, located in Mission Bay Park, does conduct green sea turtle rescue, rehabilitation, captive rearing, and releases through time, none of those turtles are released into Mission Bay and while at least two visited Mission Bay in fall of 2016, those turtles rarely return.

While the likelihood of a sensitive species occurring in the project area is low, the City will adhere to an impact avoidance plan for green sea turtles and marine mammals that incorporates operating water craft at low speeds to lessen the chance of collisions and utilizing monitors to look for the presence of sensitive species in the project area so that, if necessary, dredging activity can be suspended until the sensitive species has vacated the project area. Thus, in reviewing the scope of the proposed dredging and restoration activates, their timing, and the location and frequency of sensitive species, it is unlikely that the proposed project, as conditioned, will result in substantial adverse impacts to sensitive marine and avian species.

Terrestrial Habitat

The out-of-water work will not result in adverse habitat impacts as the proposed beach nourishment will take place on existing unvegetated sandy beach that is periodically groomed by the City, while the construction staging will occur on disturbed upland by the South Shores public launch facility.

The upland area adjacent to the South Shores public launch facility contains some disturbed coastal sage scrub but is mostly invasive and ornamental plants, and the 1.5-acre upland staging site at South Shores will be aligned to avoid impacting this habitat with construction activity. Other than the contractor staging area and placement of sand on some of the beach receiver sites, all of the work sites are located on the water.

Terrestrial habitat types identified within the project area during the biological survey are urban developed lands. At the contractor staging area, these lands include upper portions of revetted shoreline above the highest high tide, concrete trails, and escaped landscape plants. 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. No terrestrial special status species were identified within the study area.

To minimize potential adverse impacts to sensitive habitat and species, **Special Condition No. 1** requires the City to adhere to final approved plans that delineate what areas of the bay are being dredged and which areas are not, as well as where the dredge spoils will be placed. The special condition also requires that the City adhere to approved construction staging and storage plans that avoid sensitive scrub habitat in the upland

areas and final animal collision avoidance measures as detailed in their project submittal. **Special Condition No. 5** describes the mitigation and monitoring criteria that must be followed for the installment and tracking of the eel grass mitigation to be placed within Mission Bay Park. Thus, as conditioned, the City's maintenance dredging project can be found in conformance with the habitat policies of Chapter 3 of the Coastal Act.

E. WATER QUALITY

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological significance. Uses of the marine environment shall be carried out in a manner that will sustain biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Mission Bay is considered to be a dynamic but slow flow 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, river material from Rose Creek, Tecolote Creek, and 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.

The City has an active beach maintenance program within Mission Bay Park. Maintenance activities include beach grooming and sand management, trash and debris removal, and fire ring cleaning. As a result, most of the sand management activities such as sand scarp reduction are addressed by beach grooming and raking in the upper portion of the beach environment. Areas of shallow water, sandbanks, and shoals develop occasionally as a result of events such as storms and other high flow events within the dredged waterways of Mission Bay.

Mission Bay receives water from rain, input from creeks and drains, and tidal flushing from the open coast. Overall within Mission Bay, water quality is considered to be chemically high quality under most circumstances. Storm drainage can increase nutrient and sediment loads, stimulating bacterial growth, and slower nutrient releases from wind deposited fine sediments during spring months can add to algal blooms. In addition, 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, leading to occasional closures of portions of the bay. Water quality and clarity is highest in the western portions of the bay and diminishes further eastward. Mission Bay typically has good dissolved oxygen levels, stable pH levels, and low turbidity through most of the bay.

The beach areas within Mission Bay and adjacent to project activities receive storm water inputs from drains that service local watersheds. Runoff carries urban loads of dissolved constituents such as pesticides, total petroleum hydrocarbons, and metals from roadway sources. In addition, storm water discharge can severely erode the shoreline, contributing to the shoaling issue.

Beach nourishment 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 represent sand moved that below the intertidal zone, and thus out of the reach of the aforementioned existing beach grooming. The maintenance dredging will move this shoal sand back up the beach where it can be regraded into the original beach profiles.

The City's "Mission Bay Maintenance Dredging Program Dredged Material Characterization Study," dated June 2015, analyzed soil samples from the various proposed dredge sites within Mission Bay Park and found them to be chemically and physically suitable to the proposed reuse within Mission Bay Park.

According to bathymetric and eelgrass surveys from 2013, fifteen primary areas within Mission Bay currently require dredging in order to remove shoals that are causing navigational hazards for the public. The City conducted a "Mission Bay Maintenance Dredging Program Dredged Material Characterization Study" dated June 2015 to determine potential disposal options of the dredged material and maximize the amount of beneficial reuse. Based on the results of the sediment characterization study, dredged sediments will be placed within multiple disposal sites in Sail Bay or at select receiver beaches. A series of disposal and reuse sites are deep borrow pits that were originally excavated for sandy material that was placed along the Mission Bay shoreline as part of the Mission Bay Shoreline Stabilization Project of the mid-1980's.

Physical analysis of the soil indicates that the dredge sites generally range from fine to medium-grain sand. The Sail Bay borrow pits and Leisure Lagoon, where dredge spoils will be disposed, contain very fine sands and silt, respectively. The majority of the beach reuse sites consist of medium-grain sand, and the majority of the proposed dredge footprints consist of material ranging from 76 – 88 percent sand. Chemical analysis found that while some specific samples had levels of certain metals, such as arsenic and mercury, slightly above the lowest tenth-percentile level, they were below the levels

beyond which adverse impacts to local habitat would be likely. Generally, the dredge sites were found to be below pollutant levels indicating a likelihood for adverse impacts, and because much of the dredge material would be buried in the borrow pits to be covered with sand and eel grass; they will not be recirculated within the waters of Mission Bay. The soil analysis also looked at the "Z-layer" of sediments that will be exposed at the surface after the removal of the dredged material; the Z-layer was determined to be suitable to remain in the surface environment as they were compatible with current surface layer sediments and did not present a pollutant hazard.

The borrow pits range from -12 - -20 feet Mean Low Low Water (MLLW) and are currently too deep to consistently support eel grass habitat. However, backfilling these pits with sediment dredged from the proposed maintenance dredging sites would raise bottom elevations and provide the opportunity for eel grass restoration. Up to 220,268 cubic yards of material will be dredged from Sites 1-7 and 12, which would be placed in the Sail Bay borrow pits. Up to 9,615 cubic yards of material will be dredged from Sites 13 and 14 and placed into the adjacent Leisure Lagoon to bring water depths up to an elevation capable of supporting eel grass and up to 83,233 cubic yards of material could be used for beach nourishment. The Sail Bay borrow pits along with the Leisure Lagoon site will create approximately 12.8 acres of habitat at -8 MLLW.

The project will not alter the extent of hard bottom, drainage or erosion characteristics of the sites, nature of the sediments, or pollutant loading. The net result of the work is to return naturally unvegetated beach conditions to stabilized slopes and to restore bay bottoms to stable naturally vegetated conditions.

The proposed dredging has the potential to result in short-term increases in localized turbidity in the area of dredging activity and placement of reused dredge material. The project will implement measures to control turbidity generation to limit the extent of a visible turbidity plume to no more than 500 feet around the edge of the dredge activity. Because some of the dredge activity will occur in areas of high water flow, the turbidity plume may elongate rather then spread out uniformly. In such a scenario, the project shall limit turbidity plumes to the equivalent of a uniform radial plume of 500 feet. Should turbidity exceed limits, then the dredging activity shall be paused, slowed, or temporarily relocated to another part of the bay.

During dredging, turbidity will be generated due to bottom disturbance both at the dredge locations and the reuse sites. Surface turbidity is expected to be localized around the dredge, but turbidity through the water column is expected to drift with tidal currents. At the sediment reuse locations, turbidity is expected to be substantively contained by the placement of the fine materials into the deeper portions of the Sail Bay borrow pits. The material used to cap the basins at a higher elevation suitable to support eel grass is expected to remain at the location of placement. Following initial dredging and reuse site construction, it may be necessary to drag the sites with an I-beam or excavator bucket to flatten the grade, generating low level turbidity. Similarly, the dredging and reuse of beach-adjacent shoal sand on the sandy beaches receiving nourishment is expected to produce low turbidity when the beach sand is contoured and stabilized so as to minimize erosion back into the intertidal waters.

The dredging activities are generally located in areas subject to substantial tidal current in areas that support extensive eel grass. In such environments, curtain drag on the bottom can result in eel grass damage, and pile or anchor supports required to retain curtains can be extensive, difficult to construct, and very damaging to eel grass that occurs outside of the dredge footprint. The currents can also damage the curtains over time, leading to containment failure. Thus, turbidity curtains are not proposed to be utilized during the dredging. Instead, the City proposed to utilize performance based measures. Specifically, this will be accomplished by using a limitation on the distance from the operations of the visible turbidity plume. The distance from the dredging that the plume would be allowed to extend is no more than 500 feet down current from the dredge.

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 equipment operation, and pausing or relocating operations.

The infill of the borrow pits in the Sail Bay portion of Mission Bay Park will be completed in a subsurface manner so as to limit turbidity. This discharge will also be performed in a phased approach with the placement of the finer sediments from the east basin of Mission Bay on the bottom of the infill and the sandier sediments from the west basin on the top of the fill.

Turbidity curtains may be used at the Sail Bay reuse site due to their removal from the stronger currents found in other parts of Mission Bay Park. The necessity of the curtain will be determined by observation of turbidity generation.

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 a generally well-drained site that percolates precipitation rapidly into the sediment rather than running off into the bay. There are no developed sumps or storm water conveyances present on the disturbed pad. The upland staging area adjacent to South Shores public launch platform will utilize BMPs including a stabilized entrance, silt curtains, and fiber rolls.

To ensure that water quality impacts are minimized to the greatest extent possible, **Special Condition No. 4** details the temporary water quality control measures that the City should adhere to in its final construction water quality plan during the duration of the dredging. Thus, with the risks to water quality addressed, the project, as conditioned, can be found in conformance with the water quality policies of Chapter 3 of the Coastal Act.

F. LOCAL COASTAL PLANNING

Section 30604(a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the

local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made.

Mission Bay Park is primarily unzoned and is a dedicated public park. While the park has a certified Mission Bay Park Master Plan, the subject site is located within the City of San Diego in an area of deferred certification, where the Commission retains permit authority and Chapter 3 of the Coastal Act remains the legal standard of review. As conditioned, the proposed development is consistent with Chapter 3 of the Coastal Act, and thus, approval of the development, as conditioned, will not prejudice the ability of the City of San Diego to implement a certified LCP for the Mission Bay Park segment.

G. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. The City of San Diego adopted a Mitigated Negative Declaration Project No. 520687, which was filed on May 31, 2017, for this project. In the document, the City found, and proposed mitigation for, significant impacts to Biological Resources, Water Quality, and Land Use.

The proposed project has been conditioned in order to be found consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures, including conditions addressing final extent of dredging, mitigation and monitoring, and public access will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

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APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

- MISSION BAY PARK MASTER PLAN
- MISSION BAY PARK NAVIGATIONAL DREDGING MITIGATED NEGATIVE DECLARATION
- MISSION BAY MAINTENANCE DREDGING PROGRAM DREDGED MATERIAL CHARACTERIZATION STUDY DATED JUNE 2015
- WATER QUALITY MANAGEMENT PLAN IN SUPPORT OF THE MISSION BAY PARK NAVIGATIONAL SAFETY DREDGING PROJECT DATED MARCH 2017
- BIOLOGICAL RESOURCE LETTER REPORT DATED DECEMBER 2016
- MISSION BAY PARK 2013 BATHYMETRY AND EELGRASS INVENTORY
- MISSION BAY NAVIGATIONAL SAFETY DREDGING PROJECT GREEN SEA TURTLE BIOLOGICAL ASSESSMENT AND MARINE MAMMALS IMPACT AVOIDANCE AND CONTINGENCY PLAN DATED JUNE 2017
- ESSENTIAL FISH HABITAT ASSESSMENT FOR THE MISSION BAY SAFETY NAVIGATIONAL DREDGING PROJECT DATED JULY 6, 2017