CALIFORNIA COASTAL COMMISSION
South Coast Area Office
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Long Beach, CA 90802-4302
(562) 590-5071

Click here to go to original staff report

Th27p

ADDENDUM

DATE: July 11, 2016

TO: Commissioners & Interested Parties

FROM: South Coast District Staff

SUBJECT: Coastal Development Permit Application No. 5-15-0234 (Orange County Public Works), scheduled for the Commission Meeting of Thursday, July 14, 2016.

I. REVISIONS TO SPECIAL CONDITIONS

Staff recommends that the following changes be made to Special Condition No. 6 *Revised Staging Plan*, Special Condition No. 8 *Santa Ana River Levee Trails Public Access Plan*, and Special Condition No. 13 *Protection of Marine Resources*. The applicant has requested changes to these special conditions and both Commission staff and the applicant concur that the changes below are appropriate.

The change to Special Condition 6 is explained in Subsection II *Staff Recommended Changes to Findings*, of this addendum. The changes to Special Condition No. 8 are recommended to reflect that maintaining only one rather than both of the levee trails open to the public at all times during construction will support public access, provided the closure of the second trail is limited to the duration of construction and re-opened to the public as soon as possible. Public bicycle and pedestrian access from inland areas to the coast will remain available during construction even with the proposed change to Special Condition 8 reflected below. A Public Access Plan providing the details of the provision of public access on the public trails must still be prepared and submitted by the applicant for the review and approval of the Executive Director. The changes to Special Condition 13 establish more project-specific requirements. The original language of Special Condition 13 applied more generically to projects in or near coastal waters generally. The proposed project, dredging of the Santa Ana River, is more unique and tailoring the special conditions to this project more effectively protects marine resources.

Added text is shown as ***bold, italic, underlined text.*** Deleted text is shown as ~~***bold, italic, underlined and strike-through***~~.

6. Revised *Construction* Staging Plan.

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a Revised ***Construction*** Staging Plan that eliminates ***any*** ~~***the East S***~~ ***s***taging ~~***area***~~ ***in wetland area*** and identifies all staging areas to be used during project construction. The Revised ***Construction*** Staging Plan shall demonstrate that no sensitive habitat**,**

including wetlands, will be used as staging area by including a Biological Assessment ***and Wetland Delineation*** for any ***staging within the East Staging area and/or any*** newly proposed staging areas located within the coastal zone along with the Revised Staging Plan.

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

8. Santa Ana River Levee Trails Public Access Plan.

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a Public Access Plan. The Public Access Plan shall address public use of the public trails atop the two Santa Ana River levees at the subject site during project construction. The Public Access Plan shall include, but is not necessarily limited to:

1. Clarification of whether any temporary closure of portions or all of either trail is necessary, and if so, shall provide a written explanation of the exact location and the reason that a temporary closure is necessary which shall be supported by documentation (such as access requirements of construction equipment, public safety, etc.);

2. Details of the bicycle/pedestrian detour plan that shall be in place for the duration of any necessary trail closure as described in (a) above;

3. Demonstration that any trail closure shall be of the least duration necessary to accomplish the project objective;

4. Details of any public access signage to be used, including, but not limited to, detour signage (including, but not limited to, sign dimensions, sign wording, sign lettering sizes and sign locations), and the expected length of any trail closure and/or detour, and;

5. Plans to restore the trail to public use as soon as feasible;

6. Closure of ~~***either***~~ ***the west levee trail*** is prohibited during weekends ***and the west levee trail shall be maintained publically passable at all times through the use of flaggers to complete minor work including anchor relocations and other operations. Detour signage shall be positioned and maintained to direct the public to the west levee trail around the east levee trail closure.***

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

13. Protection of Marine Resources. In order to minimize adverse environmental impacts and the unpermitted deposition, spill or discharge of any liquid or solid, ***except dredged material,*** into the Santa Ana River, Newport Harbor, Huntington Harbour, or the Pacific Ocean, the permittees shall implement the following demolition, staging, and construction best management practices:

A. Silt curtains will be utilized to control turbidity during deposition of dredged materials in ~~***coastal waters***~~***Newport Harbor and Huntington Harbor. Curtain layout will be supervised by an environmental resource specialist to ensure curtains do not lay on or drag over eelgrass resources during the period of their***

deployment. In the event curtains are determined to be more detrimental than beneficial (e.g., curtains may result in dragging or circulation impacts to marine resources that exceed benefits they provide), the environmental resource specialist may propose elimination of curtains or alternative control measures acceptable to the Executive Director.

B. Floating booms shall be maintained ***near the mouth of the Santa Ana River*** ~~***around the project site***~~ in order to capture floating debris during all demolition and construction phases. ***Where material is discharged to the coastal beaches, nearshore, or beaches of Newport Harbor and Huntington Harbor, beaches will be regularly walked to remove any debris arising from the placement.***
C. Where permitted, disturbance to the ocean bottom and intertidal areas shall be minimized.
D. Machinery or construction materials not essential for project improvements are prohibited at all times in the river or subtidal or intertidal zones.
E. Sand from the beach, cobbles, or shoreline rocks shall not be used for construction material.
F. Netting, sandbags, tarps and/or other forms of barriers shall be installed between the water and work areas and equipment storage areas to prevent any unpermitted material from entering coastal waters.
G. The storage or stockpiling of soil, silt, other organic or earthen materials, or any materials and chemicals related to the construction shall not occur where such materials/chemicals could pass into coastal waters ***except as material is moved to stockpiles in the Santa Ana River as an element of the dredging project***. ***If significant rains are predicted within 72 hours,*** ~~***S***~~***s***tockpiled fill shall be stabilized with geofabric covers or other appropriate cover ***or toe protection***. Staging and storage of construction machinery and storage of debris shall not take place in the river or on any beach.
H. Erosion control/sedimentation BMPs shall be used to control sedimentation impacts to coastal waters during project activities including staging, dredging and deposition. BMPs shall include a pre-construction meeting to review procedural and BMP guidelines.
I. Spills of construction equipment fluids or other hazardous materials shall be immediately contained on-site and disposed of in an environmentally safe manner as soon as possible. Disposal within the coastal zone shall require a coastal development permit.
J. Construction vehicles operating at the project site shall be inspected daily to ensure there are no leaking fluids. If there are leaking fluids, the construction vehicles shall be serviced immediately. Equipment and machinery shall be serviced, maintained and washed only in confined areas specifically designed to control runoff and prevent discharges into coastal waters. Thinners, oils or solvents shall not be discharged into sanitary or storm sewer systems.
K. All floatable debris and trash generated by construction activities within the project area shall be disposed of as soon as possible or at the end of each day.
L. Divers will recover non-buoyant debris discharged into coastal waters as soon as possible after loss.

M. The permittees shall dispose of all demolition and construction debris resulting from the proposed project at an appropriate location in a timely manner. If the disposal site is located within the coastal zone, a coastal development permit or an amendment to this permit shall be required before disposal can take place.
N. At the end of the construction period, the permittee shall inspect the project area and ensure that no debris, trash or construction material has been left in the river, on the shore or in the water, and that the project has not created any hazard to navigation.
O. Construction activities within tidal and upland work areas shall not commence until all sediment, turbidity, and runoff control measures as appropriate have been properly installed in and around active work areas;
P. No construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to wave, wind, or rain erosion and dispersion. Construction materials shall be stored only in approved designated staging and stockpiling areas;
Q. During construction, all trash shall be properly contained. Any and all debris resulting from construction activities shall be removed on a daily basis and disposed of at an appropriate location(s);
R. All fueling and maintenance of construction equipment shall occur within upland areas outside of sensitive areas or within approved designated staging areas. Mechanized heavy equipment and other vehicles used during the construction process shall not be stored or re- fueled within 50 feet of drainage courses and other coastal waters, ***except in the case of on-water equipment such as the dredge or work boats***;
S. Fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands, and all equipment used during construction shall be free of leaks at all times.
T. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call;
U. An on-site spill prevention and control response program, consisting of BMPs for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency services agencies in the event of a spill, shall be implemented at the project site to capture and clean-up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials. ***Contractor shall maintain adequate spill response materials and capabilities to control minor spills associated with fueling or hydraulic hose ruptures and shall put into place an on-call contact structure inclusive of an emergency response contractor with capabilities to address spills of a volume at least equal to the fuel capacity of equipment operating in the Santa Ana River at any given time***;
V. If a temporary erosion control product (such as mulch control netting, erosion control blanket, or mat) is used to stabilize soils until vegetation is established, only products manufactured from 100% biodegradable (not photodegradable) materials shall be used. If temporary erosion control products that have a netting component are used, the netting shall be loose-weave natural-fiber netting. Products with plastic netting, including but not limited to polypropylene, nylon, polyethylene, and polyester shall not be used. If fiber rolls (wattles) are used for wetland protection and/or temporary sediment control, the netting component of these products shall be made of loose weave natural-fiber (not plastic) netting.

II. CHANGES TO FINDINGS

Staff recommends that the following changes be made to the findings in support of the revision to Special Condition 6 *Revised Construction Staging Plan*. The recommended change begins following the first (partial) paragraph on page 28 of the staff report, by adding a new paragraph and making the changes below to the final paragraph in the subsection under the heading *Staging* (which begins on page 26). The changes support the applicant's request that the proposed East Staging area not be prohibited as a staging area if a Wetland Delineation is performed that demonstrates that sufficient non-habitat/wetland area is available to support staging in the area with no impacts to habitat/wetlands.

Recommended additions are shown in ***bold, italic, underline***. Recommended deletions are shown in ~~***bold, italic, underline, strike-through***~~.

However, the applicant has suggested that the mapping done of the proposed East Staging area for the Vegetation Survey was conducted on a broad scale and that, in fact, the East Staging area may not actually be comprised entirely of wetland (Distrubed Alkali Heath Marsh). The applicant has suggested performing a detailed Wetland Delineation of the East Staging area to better understand the habitat types present. Indeed, photos of the area suggest portions may be unvegetated, bare land. A Wetland Delineation would evaluate, in addition to the presence or absence of wetland vegetation, the presence or absence of wetland hydrology and hydric soils. If any one of these three parameters are present, the area is considered a wetland. If none of these three parameters are present, the area would typically not be considered a wetland. It may be that portions of the East Staging area may be free of wetland in sufficient area to support staging consistent with Section 30233. However, that can only be determined with preparation of a detailed Wetland Delineation. Preparation of a Wetland Delineation specific to the proposed East Staging area would provide greater detail upon which to base a decision regarding whether staging in that area could be consistent with Section 30233 of the Coastal Act. Although such a wetland delineation may indicate construction staging may be accommodated, it should also be noted that a Wetland Delineation of the East Staging area may confirm that the site is not suitable for construction staging.

Special Condition 6 is imposed which requires ***a*** revised construction staging plan that eliminate***s any*** ~~***the east***~~ staging ~~***area from the project***~~ ***for the project within wetlands*** and that demonstrates that no construction staging will occur within sensitive habitat and/or wetland areas***. The revised Construction Staging Plan shall assess any newly proposed staging areas or any staging proposed within the East Staging area by providing a Biological Assessment for those areas. Only areas where it has been demonstrated, based upon site specific biological assessment and wetland delineation, that no wetlands or sensitive habitat will be impacted by construction staging may allow such staging. If staging is proposed within the area identified as the East Staging area or any newly proposed staging area with the potential for the presence of wetlands, a detailed Wetland Delineation shall be prepared for the area. The Biological Assessment and Wetland Delineation shall be performed by a qualified professional, subject to the review and approval of the Executive Director.*** Only as conditioned, can the Commission find that the proposed project's construction staging is consistent with Section 30233 of the Coastal Act.

No changes to the findings are necessary to support the recommended changes to Special Conditions 8 and 13.

III. CORRESPONDENCE RECEIVED

Correspondence regarding the proposed project has been received from the public.

Email Comments
The attached email questions whether the sand bars in the river mouth impact the River's functioning as a flood control channel, and, whether the project includes dredging to remove those sand bars. It also questions whether access in the area of the river mouth would need to be restricted to ensure the River's proper functioning as a flood control channel.

Although, as accurately stated in the email, Exhibit 1b of the staff report is unclear as to the seaward extent of the proposed dredging, the project plans indicate that dredging will occur to the mouth of the river. The project plans for this area of the project (Plan sheets C-101 and C-102, attached) confirm that the mouth of the river will be dredged back to original design depth. Public access during construction will necessarily be limited in the area of the river mouth. No long term access restrictions are proposed as part of this project.

It should also be noted that no formal dog beach has been approved at the Santa Ana River mouth.

Specific responses to the questions raised in the email have been provided by the project applicant (Orange County Department of Public Works) as follows:

> "The exhibits referenced are from multiple documents spanning differing maintenance cycles and planning periods [reference to Exhibit 1b in the staff report]. The documents illustrating the full extent of the channel to the ocean that are found in the current environmental document and the project plans are correct. Work does extend to the ocean as discussed further in the response to Mr. Mosher's comments below.
>
> 1. How do the sand bars in the river mouth (outside the Exhibit 1b project area) impact the River's functioning as a flood control channel?
>
> When the sand bars at the mouth exceed a certain elevation and extent, there may not be enough flow velocity upstream of the sand bars to push the sand bars out during storm events. Periodic dredging of the sand bars and the upstream river areas allows for lower velocity river flows to push sand out and minimize the amount of sand which can build up at the river mouth. Although sand will continue to accumulate at the river mouth over time, the deeper (dredged) upstream river area will allow for that sand to be pushed out during storm events. As a point of reference, the U.S. Army Corps of Engineers (USACE) Operations and Maintenance Manual has established an elevation of 0 feet MSL as the upper grade limit for the river mouth area, based on USACE hydraulics (HEC-6) analyses and in recognition of the "sand plug that usually forms at the river mouth". It should also be noted that an additional reason for dredging of the river mouth is for water quality of the upstream area, i.e. to prevent impacts to upstream river habitat due to low dissolved oxygen of the water column.
>
> 2. Will they be removed as part of this project or some other project?
>
> Yes, the sand bars will be removed as part of this project. The seaward extent of the dredging will be to approximately the seaward end of the rock jetties.

3. Does the County ever need to restrict access to this area to ensure the River's proper functioning as a flood control channel?

No. The area of the sand bars would be restricted during and immediately after large storm events for safety concerns. If the river upstream of the sand bar becomes excessively elevated, the sand bar may need to be mechanically breached for flood control, habitat maintenance, or water quality purposes if eutrophic conditions develop and fish mortality occurs. Those mechanically breaching events, when the area would be restricted, are currently permitted twice per year as part of the County's Ocean Outlets Maintenance Program (separate CDP) and take several days to complete."

Telephone Comments

Finally, one phone call from the public has been received. The caller was concerned that beach deposition in West Newport may impact private views from existing residences in the area. No deposition is proposed on dry sand in West Newport. As described in the staff report (pages 14 and 28), deposition in this area would occur in the nearshore littoral zone, which will somewhat mimic the natural process that would have occurred prior to development inland of the coast and channelization of the river necessary for flood protection of that development. It should also be noted that the Coastal Act does not protect private views.

From:	Jim Mosher
To:	Vaughn, Meg@Coastal
Subject:	Comment on Th27p (7/14/2016, Application No. 5-15-0234, Dredging of the lower Santa Ana River)
Date:	Wednesday, July 06, 2016 9:49:42 AM

Ms. Vaughn,

I wanted to point out a possible discrepancy regarding the extent of the proposed dredging.

As you may know, as Item 32 on their April 26, 2016, agenda, the Orange County Board of Supervisors introduced an ordinance intended to establish an off-leash "dog beach" on the sand bars in the mouth of the Santa River, seaward of the PCH bridge:

http://cams.ocgov.com/Web_Publisher/agenda04_26_2016.htm

The current status of that ordinance and the associated resolutions is unknown to me, but I am pretty sure none of them have yet been adopted, possibly in part because of concerns over a dog beach's potential impacts on coastal habitat.

In the meantime, as Item SS6 at their June 28, 2016, meeting, the Newport Beach City Council heard a presentation from OC Public Works regarding the dredging and sand management program which is the subject of the present CDP application. Their June 28th presentation can be seen starting at roughly 2:00:00 in the following video:

http://newportbeach.granicus.com/MediaPlayer.php?view_id=44&clip_id=2318&meta_id=172553

In response to Council questions, OC Public Works specifically said the "dog beach" sand bars would be removed during the dredging, but would likely be restored, in time, by wave action.

My comment is that Exhibit 1b ("Figure 1, Project Site") on page 46 of the 54 page PDF staff report shows the project stopping short of the proposed "dog beach" sand bars, the most publicized of which has been that on the Newport Beach side of the river mouth.

Whether or not the project area includes the outermost sand bars, I would hope that for the benefit of the Commission (and laymen like me), CCC staff would seek clarification of the following issues:

1. How do the sand bars in the river mouth (outside the Exhibit 1b project area) impact the River's functioning as a flood control channel?

2. Will they be removed as part of this project or some other project?

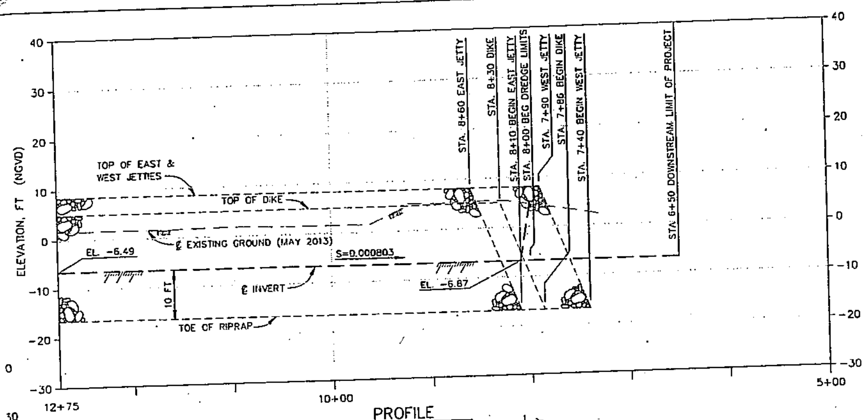
3. Does the County ever need to restrict access to this area to ensure the River's proper functioning as a flood control channel?

It is confusing to me, at least, that sand in the river bed is a flood control concern, but sand blocking the river mouth does not seem to be.

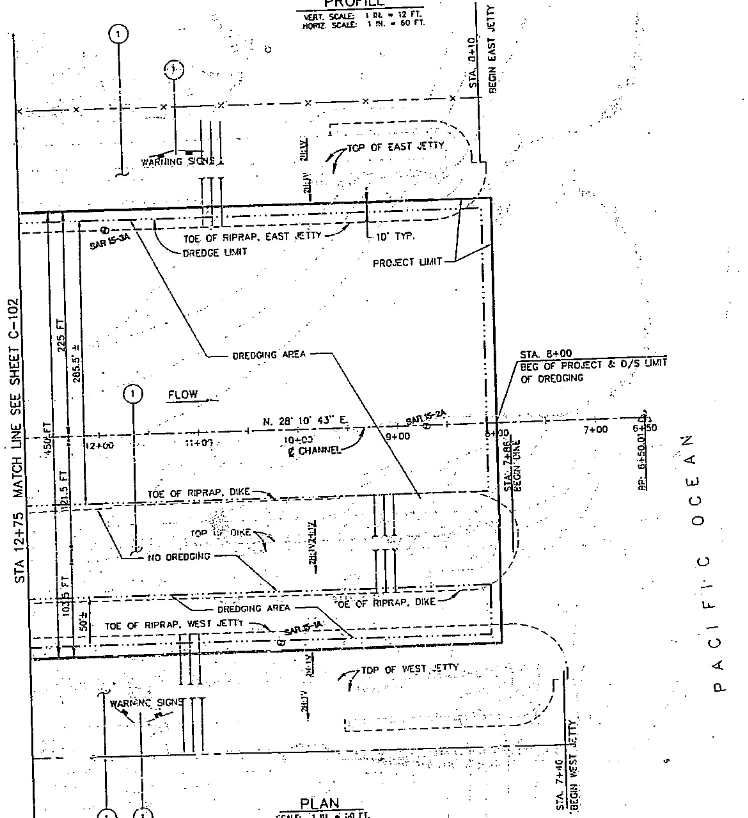
Yours sincerely,

Jim Mosher

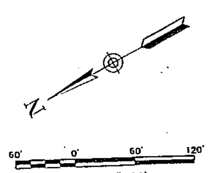
File: P:\8579 – Santa Ana River Dredging\CADD_Active_Sheetset\8579-C-101; Plotted: 10/27/2015 2:06 PM by FRAMPTON, CRAIG; Saved: 10/23/2015 11:34 AM by CFRAMPTON

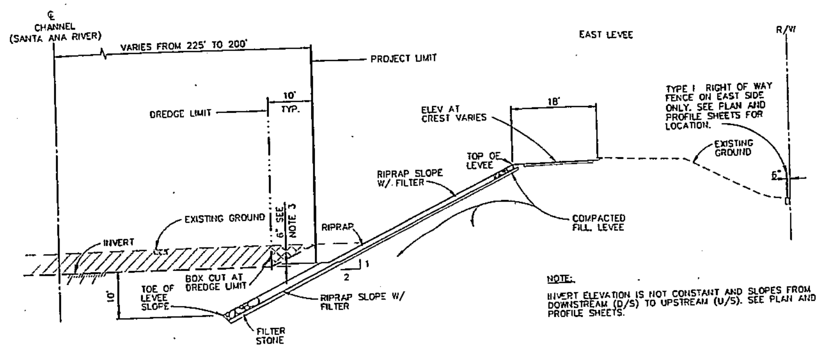


PROFILE
VERT. SCALE: 1 IN. = 12 FT.
HORIZ. SCALE: 1 IN. = 60 FT.



PLAN
SCALE: 1 IN. = 60 FT.





NOTE:
INVERT ELEVATION IS NOT CONSTANT AND SLOPES FROM DOWNSTREAM (D/S) TO UPSTREAM (U/S). SEE PLAN AND PROFILE SHEETS.

TYPICAL DREDGE SECTION AT LEVEE
NOT TO SCALE

LEGEND:

- ① PROTECT IN PLACE
- PROJECT LIMIT, SEE NOTE 1
- DREDGE LIMIT, SEE NOTE 2
- TOE OF LEVEE ROCK SLOPE
- EXISTING GROUND ALONG CENTERLINE (IN PROFILE VIEW)
- FINISHED GROUND/INVERT ALONG CENTERLINE (IN PROFILE VIEW)
- EXPLORATORY SOIL BORING (M&N)
- EXPLORATORY SOIL BORING (USACE)
- PAID MATERIAL TO BE REMOVED
- ADDITIONAL PAID MATERIAL TO BE REMOVED FROM SIDE SLOPES

NOTES:

1. PROJECT LIMIT IS DEFINED AS THE INTERSECTION OF THE RIVER BOTTOM DESIGN INVERT AND THE JETTY AND LEVEE ROCK SLOPES FOR STATION 8+00 TO 76+40. DIMENSIONS TO PROJECT LIMIT FROM RIVER STATION LINE ARE SHOWN ON THE PLAN VIEWS.
2. THE DREDGE LIMIT (LOCATION OF BOX CUT) IS 10 FEET INWARD OF THE PROJECT LIMIT ON EITHER SIDE OF THE RIVER.
3. TRANSITION OF LEVEE RIPRAP SLOPE THICKNESS FROM 3 FEET BELOW INVERT TO 6" INCHES ABOVE INVERT BETWEEN STA 76+40 AND STA 72+90.
4. INVERT ELEVATION IS DESIGN DREDGE DEPTH WITHOUT OVERDREDGE TOLERANCE.

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

MARK	DESCRIPTION	DATE	APPR.

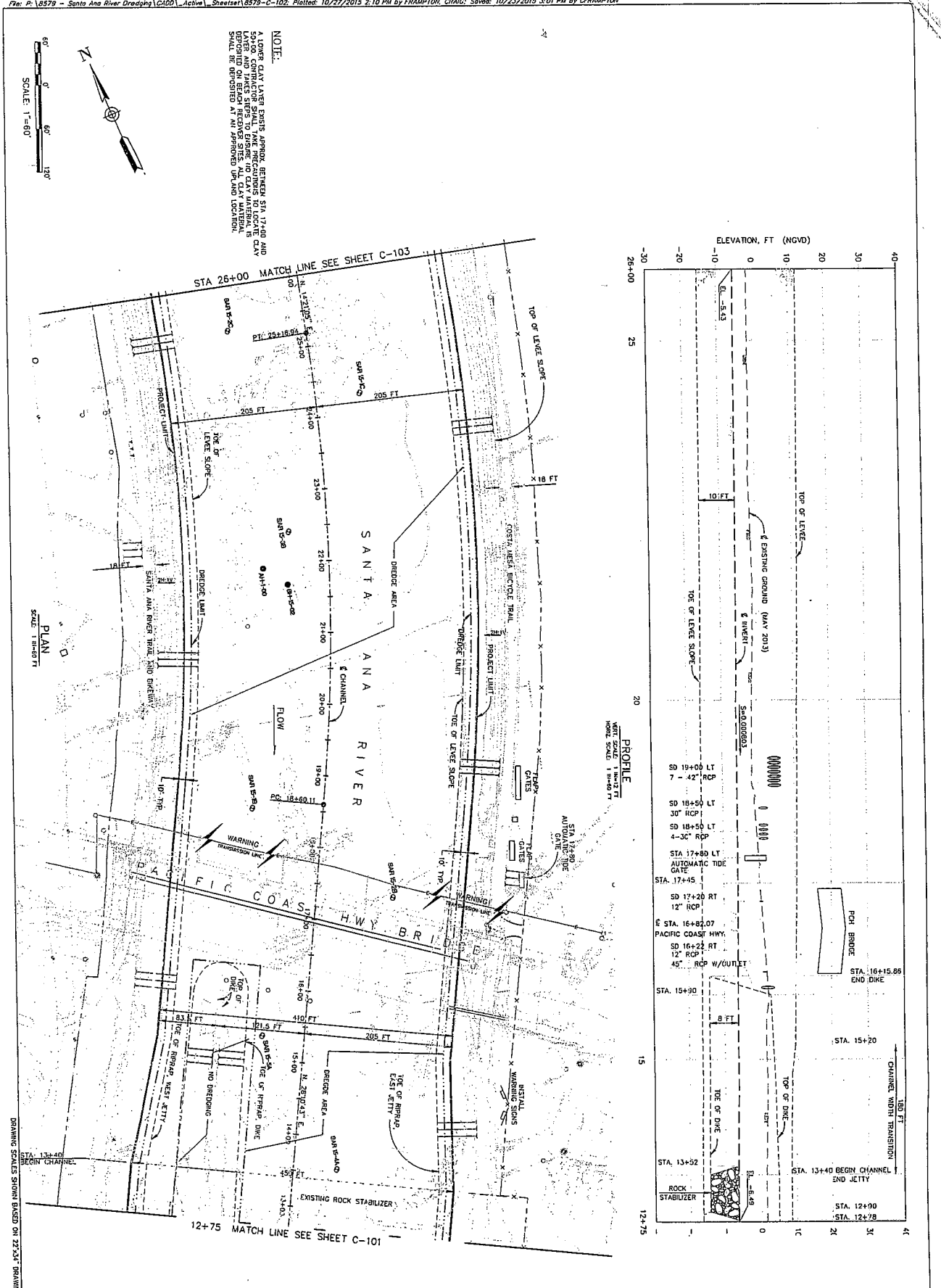
PREPARED UNDER THE RESPONSIBLE CHARGE OF
moffatt & nichol
3780 KILROY AIRPORT WAY, SUITE 600
LONG BEACH, CALIFORNIA 90806
TEL 562 426-9551
FAX 562 424-7489
RUSSELL H. BOUDREAU, P.E.
MOFFATT & NICHOL
DATE

County of Orange
DESIGNED BY: FRAMPTON/GARVEY
DRAWN BY: VETROVEC
CHECKED BY: ALCORN
DRAWING NUMBER
W.O. NO.
PREPARED BY:
moffatt & nichol
3780 KILROY AIRPORT WAY, SUITE 600
LONG BEACH, CALIFORNIA 90806
TEL 562 426-9551
FILE NAME: 8579-C-101.DWG
PLOT DATE
SCALE: 1:1 TO SHEET

LOWER SANTA ANA RIVER SAND MANAGEMENT PROJECT

DREDGING PLAN AND PROFILE STA 5+00 TO 12+75 AND TYPICAL SECTION

SHEET
C-101
INDEX: 4 OF 29



SHEET INDEX: 5 OF 29	C-102	LOWER SANTA ANA RIVER SAND MANAGEMENT PROJECT DREDGING PLAN AND PROFILE	County of Orange Public Works PREPARED BY: moffatt & nichol, 3780 KILROY AIRPORT WAY, SUITE 600, LONG BEACH, CALIFORNIA 90806, TEL 562 426-9551, FAX 562 424-7469 DESIGNED BY: FRAMPTON/GARVEY DRAWN BY: VETROVEC; CHECKED BY: ALCORN DRAWING NUMBER: W.O. NO. FILE NAME: 8579-C-102.DWG PLOT DATE: SCALE: 1:1 (D SHEET)

PREPARED UNDER THE RESPONSIBLE CHARGE OF:
moffatt & nichol, 3780 KILROY AIRPORT WAY, SUITE 600, LONG BEACH, CALIFORNIA 90806, TEL 562 426-9551, FAX 562 424-7469
REGISTERED ENGINEER OR LICENSED SURVEYOR & TITLE — DATE

MARK	DESCRIPTION	DATE	APPR

CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

Th27p

Filed:	4/28/16
180th Day:	10/25/16
Staff:	M.Vaughn-LB
Staff Report:	6/30/16
Hearing Date:	7/14/16

STAFF REPORT: REGULAR CALENDAR

Application No.	**5-15-0234**
Applicant:	Orange County Public Works James Volz, Senior Civil Engineer
Agent:	Keith Merkel, Merkel & Associates
Location:	Santa Ana River from the coastal zone boundary, downstream to the ocean outlet; and at receiver beaches including nearshore littoral zone at West Newport Beach; Surfside/Sunset beach; Balboa Island, China Cove in Newport Harbor; pocket beaches in Huntington Harbor; Orange County.
Project Description:	Dredging of the lower Santa Ana River (from the coastal zone boundary to the ocean outlet) back to original design grade; deposition of suitable dredge material in the nearshore littoral zone at West Newport Beach (approximately 1-2 miles downcoast of the Santa Ana River ocean outlet), Surfside/Sunset beach, Balboa Island, China Cove in Newport Harbor, and pocket beaches in Huntington Harbor; and implementation of a Comprehensive Eelgrass Management Plan.
Staff Recommendation:	Approval with Conditions.

SUMMARY OF STAFF RECOMMENDATION

The federally-constructed channel of the Santa Ana River provides flood protection for multiple surrounding communities. Major changes to the Santa Ana River were undertaken as part of a project known as the Santa Ana River Mainstem project, approved by the Coastal Commission in 1988 under Consistency Determination CC-29-88 (U.S. Army Corps of Engineers). The Santa Ana River channel is now maintained by Orange County Public Works. A survey of the river was conducted in 2013 and revealed that sediment deposition exceeded the limits allowed under the U.S. Army Corps of Engineer's *Operation &Maintenance Manual*. Consequently, the Corps has required that the County of Orange remove the excess sediment within two years. The proposed dredging project would remove built-up sediments and return the Santa Ana River channel back to design depths approved under CC-29-88. The proposed project is necessary to restore the flood protection capacity of the channel

required to protect approximately 64,000 surrounding acres and a population of more than 60,000. The project also proposes to depose of suitable dredge material on local beaches. In addition, a Comprehensive Eelgrass Management Plan is proposed to address the proposed project's impacts to eelgrass beds within the channel.

Commission staff is recommending **approval** of the coastal development permit for the proposed development with twelve (14) special conditions requiring the applicant to: 1) conduct biological monitoring to avoid impacts to grunion, western snowy plover, and dune habitat; 2) conduct biological monitoring to avoid impacts to the California least tern; 3) perform nesting bird surveys to avoid impacts to several sensitive bird species known to be present in the project area including the western snowy plover, California least tern, and Belding's savannah sparrow; 4) implement the Comprehensive Eelgrass Management Plan as proposed by the applicant; 5) submit a West Newport Beach Deposition Plan to specify project components; 6) submit a Revised Staging Plan that avoids impacts to wetlands; 7) submit a Clay Layer Avoidance Plan to assure that all dredge materials to be placed on the beach are suitable for such use; 8) submit a Public Access Plan to ensure access along the public trails located atop both of the channel levees during construction; 9) submit a Surf Break Monitoring Plan; 10) submit beach profile monitoring reports following deposition; 11) prohibit deposition in Grand Canal, Balboa Island; 12) implement the NMFS Eelgrass Monitoring Plan if any deposition occurs within the Newport Harbor or Huntington Harbour sites; 13) implement construction Best Management Practices; and 14) comply with all requirements of the California Department of Fish and Wildlife, the Regional Water Quality Control Board, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

I move that the Commission approve Coastal Development Permit No. 5-15-0234 pursuant to the staff recommendation.

Staff recommends a YES vote. Passage of this motion will result in approval of the permit as conditioned 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 a coastal development permit for the proposed development 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 applicant 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 or 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 applicant 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. **Grunion, Western Snowy Plover, and Dune Habitat Protection**. The applicant shall retain the services of a qualified environmental resources specialist with appropriate qualifications acceptable to the Executive Director, to monitor the ocean beach deposition sites prior to deposition and conduct sensitive species pre-construction surveys. Prior to the commencement of any ocean beach deposition activities, the applicant shall submit the contact information of all monitors with a description of their duties and their on-site schedule to the Executive Director for review and written approval. The applicant shall ensure that the environmental resources specialist shall perform all of the following duties, and the applicant shall observe the following requirements:

   Prior to ocean beach deposition activities, the applicant shall have the environmental resource specialist conduct a survey of the project site, to determine:

   A. Presence of California grunion during the seasonally predicted run period and egg incubation period, as identified by the California Department of Fish and Wildlife. If the environmental resources specialist determines that any grunion spawning activity is occurring and/or that grunion are present in or adjacent to the project site, then no depositon of dredge materials shall occur on, or adjacent to, the area of the beach where grunion have been observed to spawn until the next predicted run in which no grunion are observed. Surveys shall be conducted for all seasonally predicted run periods in which operation of mechanized equipment, grading, or sand movement would occur on the sandy beach portion of the project site. If the applicant is in the process of grading/sand movement, the material shall be graded and groomed to contours that will enhance the habitat for grunion prior to the run period. Furthermore, grading/sand movement/operation of mechanized equipment activities shall cease in order to determine whether grunion are using the beach during the following run period. The applicant shall have the environmental resource specialist provide written inspection reports after each grunion run observed and shall provide copies of such reports to the Executive Director and to the California Department of Fish and Wildlife.

   B. Presence or absence of the western snowy plover. If the environmental resources specialist determines that western snowy plover are present within the ocean beach deposition area, measures shall be implemented to assure no snowy plovers are harmed by the beach deposition activity. Such measures may include delaying deposition until the plovers have departed the area and/or flagging the area to be avoided. The applicant shall have the environmental resource specialist provide a written report documenting the presence or absence of the western snowy plover, and shall provide copies of such report to the Executive Director and to the California Department of Fish and Wildlife.

   C. Presence or absence of dune habitat (including remnant dune habitat). Dune habitat shall be identified and flagged for protection. No sand deposition shall occur within 50 feet of any dune habitat. The applicant shall have the environmental resource specialist provide a written report documenting the presence or absence of dune habitat, and shall provide copies of such report to the Executive Director and to the California Department of Fish and Wildlife.

2. **California Least Tern and Shoal Removal**. The applicant shall retain the services of a qualified environmental resources specialist with appropriate qualifications acceptable to the Executive Director, to monitor the removal of any channel shoals from within the Santa Ana River. The monitor shall determine whether any California Least Terns are present on the shoals. If California Least Terns are present, work shall be directed a minimum of 300 feet away from the Least Tern as long as the Least Tern is present. The qualified environmental resources specialist shall be present during river dredge operations as long as channel shoals remain in the river.

3. **Nesting Bird Survey**
   A. If construction activities are to occur during bird nesting season (January 1 through April 30), a qualified environmental resources specialist with appropriate qualifications acceptable to the Executive Director, and with experience in conducting bird surveys, shall conduct a bird nesting survey(s) within the thirty (30) days prior to commencement of development to detect any active raptor and/or U.S. Fish & Wildlife Service (USFWS) and/or California Department of Fish & Wildlife (CDFW) listed species and/or species of special concern nests or nesting activity within 500 feet of the project area. If an active nest or nesting activity is determined to be located within 500 feet of active dredging activities, all such activities within 500 feet from raptor nests and 300 feet from CDFW and/or USFWS listed species and/or species of special concern, shall cease until the qualified biologist has confirmed that the detected nest(s) is vacated and juveniles have fledged and there is no evidence of a second attempt at nesting. The 500-foot limit (raptors) and/or 300-foot limit (CDFW and/or USFWS listed species and/or species of special concern) shall be identified and protected with flagging, stakes, or construction fencing. Construction personnel shall be instructed by the qualified biologist on the sensitivity of the area and biological importance of maintaining the buffer area to allow the continuation of the natural nesting and fledgling process. The qualified environmental resources specialist shall record the results of the recommended protective measures described above to document compliance with this special condition and with applicable State and Federal laws pertaining to protection of nesting birds. The biologist's recorded results shall be submitted to the Executive Director within fifteen (15) days of discovery of the nest(s), along with a description of protective measures implemented.

   B. Activities allowed under this permit located further than 500 feet of an active raptor and/or 300 feet from an active CDFW and/or USFWS listed species and/or species of special concern nest or nesting activities, however, may continue.

4. **Implement Eelgrass Management Plan as Proposed.** The applicant shall carry out the Lower Santa Ana River Sand Management Project Eelgrass Comprehensive Management Plan (Merkel & Associates, March 2016) as proposed. No changes to the approved plan may occur unless the Commission amends this coastal development permit or the Executive Director determines that no amendment is legally required for any proposed minor deviations.

5. **West Newport Beach Deposition Plan**.
   A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a West Newport Beach Deposition Plan, prepared by a qualified professional, that identifies the

specific methods of deposition to be implemented. Methods shall be in substantial conformance with the two alternatives presented in the application submittal which are either: pipeline to dredge scow with deposition to be from the scow above the deposition site, or, pipeline directly to the deposition site.

B. Such Plan shall include all construction measures to be implemented including types of equipment to be used and specific placement of each piece of deposition equipment.

C. Any alternative in addition to the two alternatives presented by the applicant other than the two methods described in the proposed project coastal development permit application shall be submitted to the Executive Director for a determination as to whether the additional alternative requires an amendment to this coastal development permit or whether no amendment is legally required.

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

6. Revised Staging Plan.

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a Revised Staging Plan that eliminates the East Staging area and identifies all staging areas to be used during project construction. The Revised Staging Plan shall demonstrate that no sensitive habitat will be used as staging area by including a Biological Assessment for any newly proposed staging areas located within the coastal zone along with the Revised Staging Plan.

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

7. Clay Layer Avoidance Plan.

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a Clay Layer Avoidance Plan, prepared by the project engineer, that includes:

1. All likely clay elevations in sufficient detail that the construction contractor is aware of where clay is likely to be encountered.

2. A thorough definition of clay, based on the results of the Final Sampling and Analysis Plan Results Report (Moffatt & Nichol, September 2015), which can be used by contractors in the field to identify clay material.

3. A statement that no clay material is to be included in any beach deposition materials.

4. A requirement for utilization of a geotechnical professional (e.g. “third party watchstander”), to oversee operations to ensure proper characterization of dredge material, and the required credentials of the geotechnical professional.

5. Standard Operating Procedure (SOP) in the event clay is encountered regarding operation, sorting, and holding location.

B. The approved Clay Layer Avoidance Plan shall be implemented to assure no clay is included in any beach deposition materials.

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

8. Santa Ana River Levee Trails Public Access Plan.

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a Public Access Plan. The Public Access Plan shall address public use of the public trails atop the two Santa Ana River levees at the subject site during project construction. The Public Access Plan shall include, but is not necessarily limited to:

1. Clarification of whether any temporary closure of portions or all of either trail is necessary, and if so, shall provide a written explanation of the exact location and the reason that a temporary closure is necessary which shall be supported by documentation (such as access requirements of construction equipment, public safety, etc.);
2. Details of the bicycle/pedestrian detour plan that shall be in place for the duration of any necessary trail closure as described in (a) above;
3. Demonstration that any trail closure shall be of the least duration necessary to accomplish the project objective;
4. Details of any public access signage to be used, including, but not limited to, detour signage (including, but not limited to, sign dimensions, sign wording, sign lettering sizes and sign locations), and the expected length of any trail closure and/or detour, and;
5. Plans to restore the trail to public use as soon as feasible;
6. Closure of either trail is prohibited during weekends.

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

9. Surf Break Monitoring. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a Surf Break Monitoring Plan, to be implemented if deposition occurs at any of the identified ocean beach deposition locations. The Monitoring Plan shall:

A. Document the surf conditions a minimum of three times per week for at least one month prior to deposition. Required documentation shall include, but not necessarily be limited to, timing of the wave sets, size of the waves, distance of the breaking wave from the shore, whether or not a change is observed where waves tend to close-out over the observation period rather than peak, or whether or not a change is observed indicating a perpetual shorebreak at the beach rather than a nearshore bar for waves to break over; and the presence or absence of surfers off shore of the deposition site;;

B. Document the same surf conditions (described above) and presence or absence of surfers off shore of the deposition site at least three times per week for a minimum of eight weeks beginning within one week of the completion of deposition;

C. At the conclusion of the required monitoring, a written report shall be prepared by a qualified professional, assessing and comparing the conditions prior to and following the beach deposition event. The report, which shall be submitted to the Executive Director, shall draw conclusions and make recommendations to improve future deposition events' impacts on surf breaks.

D. A separate Surf Break Monitoring Plan shall be required for each beach deposition location where deposition occurs under this coastal development permit.

10. Beach Profile Monitoring.

A. Within one month of completion of beach deposition at any of the beach deposition sites identified in this coastal development permit, the applicant shall monitor the subject

beach's profile by preparing beach profiles along the same transect alignment as the pre-deposition, base line transects. Beach profiles shall also be conducted annually following completion of the first, post-deposition beach profile. The annual beach profiles shall continue until either the profile returns to its pre-disposal condition or the site is further modified by additional nourishment.

B. Reports documenting the required beach profile monitoring shall be prepared by a qualified professional and submitted to the Executive Director following the one-month after disposal profile(s) and after each annual survey. The required reports shall be submitted to the Executive Director within three months of each required profile event. These reports shall provide information on site conditions and analysis of the long-term changes to the depositions site(s) beach profile(s).

11. **Grand Canal, Balboa Island.** Deposition in Grand Canal, Balboa Island is not permitted under this coastal development permit.

12. **Eelgrass Survey and Mitigation Requirements.** Prior to any deposition within the approved deposition sites within Newport Harbor (Balboa Island's Grand Canal is not an approved deposition site under this coastal development permit) and/or Huntington Harbour, the following shall occur:

A. Pre-Construction Eelgrass Survey. A valid pre-construction eelgrass (*Zostera marina*) survey shall be completed during the period of active growth of eelgrass (typically March through October). The pre-construction survey shall be completed prior to the beginning of construction and shall be valid until the next period of active growth. If any portion of the project commences in a previously undisturbed area after the last valid eelgrass survey expires, a new survey is required prior to commencement of work in that area. The survey shall be prepared in full compliance with the "*California Eelgrass Mitigation Policy*" dated October 2014 (see http://www.westcoast.fisheries.noaa.gov/habitat/habitat_types/ seagrass_ info/california_eelgrass.html) (except as modified by this special condition) adopted by the National Marine Fisheries Service and shall be prepared in consultation with the California Department of Fish and Wildlife. The permittees shall submit the eelgrass survey for the review and approval by the Executive Director within five (5) business days of completion of each eelgrass survey and in any event no later than fifteen (15) business days prior to commencement of any development.

B. Post Construction Eelgrass Survey. If any eelgrass is identified in the project area by the survey required in subsection A of this condition above, within one month after the conclusion of construction, the permittees shall survey the project site to determine if any eelgrass was adversely impacted. The survey shall be prepared in full compliance with the "*California Eelgrass Mitigation Policy*" dated October 2014 (except as modified by this special condition) adopted by the National Marine Fisheries Service and shall be prepared in consultation with the California Department of Fish and Wildlife. The permittees shall submit the post-construction eelgrass survey for the review and approval by the Executive Director within thirty (30) days after completion of the survey. If any eelgrass has been impacted, the permittees shall replace the impacted eelgrass at a minimum 1.38:1 ratio on-site, or at another location, in accordance with the California Eelgrass Mitigation Policy. The exceptions to the required 1.38:1 mitigation ratio found within the California Eelgrass

Mitigation Policy shall not apply. Implementation of mitigation shall require an amendment to this permit or a new Coastal Development Permit unless the Executive Director determines that no amendment or new permit is legally required.

13. **Protection of Marine Resources.** In order to minimize adverse environmental impacts and the unpermitted deposition, spill or discharge of any liquid or solid into the Santa Ana River, Newport Harbor, Huntington Harbour, or the Pacific Ocean, the permittees shall implement the following demolition, staging, and construction best management practices:

A. Silt curtains will be utilized to control turbidity during deposition of dredged materials in coastal waters.
B. Floating booms shall be maintained around the project site in order to capture floating debris during all demolition and construction phases.
C. Where permitted, disturbance to the ocean bottom and intertidal areas shall be minimized.
D. Machinery or construction materials not essential for project improvements are prohibited at all times in the river or subtidal or intertidal zones.
E. Sand from the beach, cobbles, or shoreline rocks shall not be used for construction material.
F. Netting, sandbags, tarps and/or other forms of barriers shall be installed between the water and work areas and equipment storage areas to prevent any unpermitted material from entering coastal waters.
G. The storage or stockpiling of soil, silt, other organic or earthen materials, or any materials and chemicals related to the construction shall not occur where such materials/chemicals could pass into coastal waters. Stockpiled fill shall be stabilized with geofabric covers or other appropriate cover. Staging and storage of construction machinery and storage of debris shall not take place in the river or on any beach.
H. Erosion control/sedimentation BMPs shall be used to control sedimentation impacts to coastal waters during project activities including staging, dredging and deposition. BMPs shall include a pre-construction meeting to review procedural and BMP guidelines.
I. Spills of construction equipment fluids or other hazardous materials shall be immediately contained on-site and disposed of in an environmentally safe manner as soon as possible. Disposal within the coastal zone shall require a coastal development permit.
J. Construction vehicles operating at the project site shall be inspected daily to ensure there are no leaking fluids. If there are leaking fluids, the construction vehicles shall be serviced immediately. Equipment and machinery shall be serviced, maintained and washed only in confined areas specifically designed to control runoff and prevent discharges into coastal waters. Thinners, oils or solvents shall not be discharged into sanitary or storm sewer systems.
K. All floatable debris and trash generated by construction activities within the project area shall be disposed of as soon as possible or at the end of each day.
L. Divers will recover non-buoyant debris discharged into coastal waters as soon as possible after loss.
M. The permittees shall dispose of all demolition and construction debris resulting from the proposed project at an appropriate location in a timely manner. If the disposal site is located within the coastal zone, a coastal development permit or an amendment to this permit shall be required before disposal can take place.
N. At the end of the construction period, the permittee shall inspect the project area and ensure that no debris, trash or construction material has been left in the river, on the shore or in the water, and that the project has not created any hazard to navigation.

O. Construction activities within tidal and upland work areas shall not commence until all sediment, turbidity, and runoff control measures as appropriate have been properly installed in and around active work areas;
P. No construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to wave, wind, or rain erosion and dispersion. Construction materials shall be stored only in approved designated staging and stockpiling areas;
Q. During construction, all trash shall be properly contained. Any and all debris resulting from construction activities shall be removed on a daily basis and disposed of at an appropriate location(s);
R. All fueling and maintenance of construction equipment shall occur within upland areas outside of sensitive areas or within approved designated staging areas. Mechanized heavy equipment and other vehicles used during the construction process shall not be stored or re-fueled within 50 feet of drainage courses and other coastal waters;
S. Fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands, and all equipment used during construction shall be free of leaks at all times.
T. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call;
U. An on-site spill prevention and control response program, consisting of BMPs for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency services agencies in the event of a spill, shall be implemented at the project site to capture and clean-up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials;
V. If a temporary erosion control product (such as mulch control netting, erosion control blanket, or mat) is used to stabilize soils until vegetation is established, only products manufactured from 100% biodegradable (not photodegradable) materials shall be used. If temporary erosion control products that have a netting component are used, the netting shall be loose-weave natural-fiber netting. Products with plastic netting, including but not limited to polypropylene, nylon, polyethylene, and polyester shall not be used. If fiber rolls (wattles) are used for wetland protection and/or temporary sediment control, the netting component of these products shall be made of loose weave natural-fiber (not plastic) netting.

14. Resource Agencies. The permittee shall comply with all requirements, requests and mitigation measures from the California Department of Fish and Wildlife, the Regional Water Quality Control Board, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service with respect to preservation and protection of water quality and marine environment. Any change in the approved project that may be required by the above-stated agencies shall be submitted to the Executive Director in order to determine if the proposed change shall require a permit amendment pursuant to the requirements of the Coastal Act and the California Code of Regulations.

IV. FINDINGS AND DECLARATION

A. PROJECT LOCATION AND DESCRIPTION

The applicant, the Orange County Public Works Department, proposes: 1) maintenance dredging of the lower Santa Ana River back to original design depths constructed under the Santa Ana River Mainstem Project between 1991 through 1994; 2) deposition of suitable dredge material in the nearshore littoral zone at West Newport Beach in the nearshore zone (approximately 1-2 miles downcoast of the Santa Ana River ocean outlet); 3) opportunistic deposition at the following additional locations: Surfside/Sunset beach; East Beach in Seal Beach; Balboa Island and China Cove in Newport Harbor; and five pocket beaches in Huntington Harbor; and, 4) implementation of an Eelgrass Management Plan. Each of these project components is described in greater detail below.

The Santa Ana River (SAR) drains a watershed of approximately 1,700 square miles extending over portions of Orange, Riverside, San Bernardino, and Los Angeles County (Exhibit 2). The river is a perennial drainage with the lower 23 miles of the river below the Prado Flood Control Basin being channelized and serving as a flood control channel providing protection for multiple municipalities and unincorporated areas. Within the lower Santa Ana River (LSAR) the drainage serves to collect and convey storm water, providing flood protection to multiple jurisdictions. The Santa Ana River ultimately discharges to the Pacific Ocean. The Santa Ana River is part of a federally constructed flood risk management facility that must be maintained by the County of Orange Public Works Department (OC Public Works) as the local sponsor. Maintenance of the Santa Ana River flood control system is guided by the "*Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual for the Lower Santa Ana River Channel*" (U.S. Army Corps of Engineers, December 1996).

The LSAR channel accumulates river-borne fluvial sediment that progresses into the tidally influenced areas from upstream reaches. Sediment continues to accumulate in the LSAR. This accumulated sediment causes the invert (design depth) to rise. At the lower end of the river, the littoral sediment enters the river channel from the coastal beach and generates a flood shoal that partially closes the lower river channel off from tidal influence. As the fluvial and littoral shoals build in the channel, the channel capacity to convey storm flows is diminished, putting portions of cities of Huntington Beach, Newport Beach, and Costa Mesa at increased flood risk from storm flows breaching over the channel banks and/or backing water up within side channels that cannot drain into the LSAR due to sediment barriers or due to high water levels in the river.

To avoid flooding of the bordering communities, the LSAR must be periodically dredged when maintenance triggers are met (i.e. sediment in the channel exceeds certain levels) in order to remove shoals and return flow capacity to the channel. Major sediment removal was anticipated under the original project design and is generally required on an infrequent basis with annual or routine maintenance also being performed. The sediment removed from the LSAR provides good material for beach nourishment.

Location

The Santa Ana River is located in unincorporated Orange County between the cities of Huntington Beach and Newport Beach. The entire project site is located in the lower Santa Ana River from the mouth of the river at the Pacific Ocean, upstream to the Adams Avenue, a distance of approximately 3.5 miles. However, the coastal zone extends inland only to the Hamilton/Victoria bridge at Hamilton Avenue (on the Huntington Beach side of the Santa Ana River)/Victoria Street (on the Newport Beach

side of the river), thus of the total project area, only approximately 1.5 miles fall within the coastal zone. The Hamilton/Victoria bridge is located at approximately Station 91+00 on the project plans.

The Santa Ana River is an LCP segment of the County of Orange. There is no certified LCP for this LCP segment of the County of Orange and none is expected in the foreseeable future as most of this area is located within the Commission's retained jurisdiction as it is a tidally influenced area. The standard of review is the Chapter 3 policies of the Coastal Act.

Santa Ana River Dredge

The dredging amount for the entire project (including the area upstream of the coastal zone) is approximately 1.1 million cubic yards; however, the amount of dredging within the coastal zone totals approximately 430,000 cubic yards. These figures include a two-foot over-dredge allowance to account for a 20% contingency for ongoing sedimentation that has occurred since the 2013 survey of the channel was completed and for incidental sloughing of side slopes during construction. Minor amounts of fill are expected in some areas to backfill existing areas that are lower than the design invert elevation. Within the coastal zone, this is proposed in the area of the Victoria Street Bridge and will consist of approximately 286 cubic yards of fill in the river bed.

The channel within the coastal zone is a soft-bottom, trapezoidal channel with rip rap side slopes. The downstream, ocean outlet is comprised of two approximately 50 foot wide (at base), approximately 9 feet high, rip rap (2:1 slopes) east and west jetties. Approximately 50 feet east of the toe of the west jetty is an approximately 50 foot wide (at base) rip rap (2:1 slope) dike. Dredging is proposed to occur up to ten feet within the toe of these structures. No work to the structures themselves is proposed. The sides of the river channel are comprised of approximately 11 to 12 foot high, approximately 50 foot wide (at base) rip rap levies. The width of the channel from toe of levee to toe of levee is approximately 410 feet near the downstream end and narrowing slightly inland to approximately 370 feet wide at the Hamilton/Victoria bridge. Dredging is proposed to occur up to ten feet within the toe of the levees. No work to the structures themselves is proposed. The Greenville-Banning flood control channel enters the Santa Ana River within the project area, at approximately Station76+40, near the inland extent of the coastal zone. However, no work is proposed within the Greenville-Banning channel.

For the proposed dredge project, construction methods will be a combination of hydraulic dredging for work in the downstream tidal zone and land-based excavation in the dry upstream end. The project area within the coastal zone generally coincides with the area proposed for hydraulic dredging. Dry material upstream of the coastal zone boundary will be removed with traditional grading equipment such as excavators, bulldozers, scrapers, front-end loaders and dump trucks. Suitable material removed from both the area in the coastal zone as well as the area inland of the coastal zone boundary will be used for beach deposition. Unsuitable materials will be disposed of inland.

An upper grade limit for sediment accumulation was established for this channel by the USACE, and is described in the Corps' *Operations and Maintenance (O&M) Manual*. Once sediment deposition exceeds this limit, the sediment must be removed to return the river to its design invert elevation in order to provide the level of flood risk management established when the project was originally constructed. The anticipated maintenance frequency for the lower reach identified in the Corps' *O&M Manual* is estimated to occur approximately once every 18 years, based on a long-term average. The actual frequency may vary, depending on storm events and other factors that affect deposition and scour. The last maintenance dredging occurred in 2005, only eleven years ago. However, that last

dredging event did not fully return the channel to its design invert elevations. A survey of the river was conducted in 2013 and revealed that sediment deposition exceeded the limits allowed under the Corps' *O&M Manual*. Consequently, the Corps has required that the County of Orange remove the excess sediment within two years. Failure to return the river to the original design configuration would not only increase flood risk to the surrounding community, but would also jeopardize federal funding for disaster recovery assistance due to flooding. Currently, the accumulated sediment is at or above the upper grade limit in virtually the entire reach within the coastal zone.

Public bicycle and pedestrian trails are located atop both river levees and extend the entire length length of the project area and continue inland for miles. The trail on the west levee connects directly to the Huntington Beach Bike trail, which continues along the beach west of the project site, and the trail on the east levee connects to Pacific Coast Highway.

Beach Deposition

Suitable material removed from the channel will be deposited at area beaches in the general project vicinity. Deposition will include suitable materials from the entire project including both material from within the coastal zone as well as inland of the coastal zone up to the inland extent of the proposed project (approximately 3.5 miles inland of the ocean outlet, just upstream of the Adams Avenue bridge). The majority of beach deposition is expected to occur in the nearshore littoral zone at West Newport Beach. If additional materials are available, additional opportunistic deposition is proposed to occur at any of the following locations: Surfside/Sunset beach; Balboa Island and China Cove in Newport Harbor; and five pocket beaches in Huntington Harbor: Kayak Beach, Davenport Beach, Humboldt Beach, Trinidad Beach, and Seabridge Park Beach (Exhibit 4).

Within the project dredging area within the coastal zone, a lower clay layer exists approximately between Stations 17+00 and 50+ 00. Because it is unsuitable for beach deposition, it is important to assure that no clay material is deposited on any of the proposed receiver sites. The applicant has proposed that this clay layer will be left in place within the channel and not included in beach deposition. However, the Final Sampling and Analysis Plan Results Report (SAP) (Moffatt & Nichol, September 2015), which evaluated the material to be dredged for compatibility as beach replenishment states that the clay material may be disposed of at an upland disposal site. Under either scenario, the unsuitable clay material will not be deposited on any beaches. Upstream, outside of the coastal zone, any material not suitable for beach deposition will be removed from the channel with traditional earth moving equipment such as bulldozers and excavators, allowed to dry, and then loaded into dump trucks for appropriate disposal outside the coastal zone.

Suitable materials to be deposited at the West Newport nearshore area would be moved using either a pipeline only or a pipeline and dump scow. Materials would be screened for vegetation and debris and then transported downstream of Hamilton Avenue/Victoria Street Bridge where it would be 1) pumped to the West Newport nearshore area via a pipeline placed on the ocean floor or buried on the dry sandy beach and/or 2) piped onto a dump scow (barge) positioned at the ocean outlet which would transport the material to the West Newport nearshore and deposited at the receiver site. If only the pipeline method is used, the outlet pipe would be repositioned periodically to spread the material in order to achieve the specific proposed fill design. A temporary sand berm may be constructed across the river just upstream of the east tide gates connecting the river to the Santa Ana River Marsh for the purpose of holding back the flow upstream of the berm, which would allow more dry material to be moved using traditional grading equipment. No equipment is to be used and no deposition will occur on the dry sand of West Newport Beach.

Suitable material to be deposited at the other opportunistic receiver sites (Sunset/Surfide; East Beach in Seal Beach; Huntington Harbour; Newport Harbor) would be moved by dump scow and piped onshore or transported via trucks and placed onshore. If a dump scow is used, material would be hydraulically pumped from the lower Santa Ana River to a dump scow positioned at the ocean outlet which would transport the slurry material to one or more of the potential receiver sites where it would then be pumped from the scow to the onshore zone. Sand containment dikes would be constructed on the beach to receive and dewater the slurry material. Alternatively, the material could be transported to one or more of the potential receiver sites via trucks hauling the screened material taken from the upstream area outside the coastal zone. Bulldozers would ultimately spread the material along the beach to the proposed project fill design.

Eelgrass Management Plan

Eelgrass is currently present in the Lower Santa Ana River in abundance (Exhibit 6). Within the LSAR, eelgrass has historically been very intermittent and minimal in its occurrence. However, currently there are approximately 31,420 square meters of eelgrass present within the project footprint. More commonly, fewer than 1,000 square meters are present; most commonly the area occupied by eelgrass is nearer to zero.

Typically, the Commission requires that, if any eelgrass has been impacted by a project, that the lost eelgrass be replanted at a minimum 1.38:1 ratio (mitigation:impact) on-site, or as near to on-site as possible. However, in this case, because of the unusual and anomalous elevated presence of eelgrass within the project are, rather than the typically imposed mitigation requirement, the applicant has proposed a *Comprehensive Eelgrass Management Plan* (Merkel & Associates, March 2016). Under the proposed *Comprehensive Eelgrass Management Plan*, pre- and post- construction (dredging) eelgrass surveys would be conducted to document the presence and extent of eelgrass within the LSAR. However, rather than replanting at the pre-determined, typically imposed ratio of 1.38 to 1, the Management Plan requires that a third survey be conducted one year following completion of the dredge project to determine whether eelgrass has re-established and to identify areas of the channel suitable to support eelgrass re-establishment. Where suitable areas are identified, eelgrass transplant units will be planted. This planting will be conducted in the first year following the third survey, and up to 4,636 square meters (1.15 acres) of planting will be performed within the potentially suitable locations identified in the LSAR. The proposed *Comprehensive Eelgrass Mitigation Plan* has been reviewed and accepted by staff of National Marine Fisheries; U.S. Army Corps of Engineers; California Department of Fish & Wildlife; and, the Coastal Commission's staff ecologist.

Santa Ana River Mainstem Project History

The Santa Ana River Mainstem Project (SARP) was designed to provide flood protection to people and development within the area surrounding the Santa Ana River. As part of the SARP, the lower Santa Ana River underwent major reconstruction from spring of 1991 through spring of 1994 to improve flood control capacity along the river, from the ocean and extending inland 23 miles. Over time, the river fills with sediment, decreasing its ability to effectively transport flood and sediment flows to the sea. Because the area surrounding the river is no longer in a natural condition, sediment accumulation within the river interferes with the river's ability to safely transport river waters, particularly under high flow, storm conditions. With development that has occurred over approximately the last century, runoff that may have been absorbed into the ground and other factors such as increased irrigation, combine to both increase the runoff into the river as well as increasing the related sediment carried within the river. As a result, the river has necessarily become a more managed

regime. The SARP is a result of long time, surrounding development on the river system. In concurring with Consistency Determination CD-29-88, the Commission recognized this scenario.

The original SARP design recognized that maintenance dredging of the river would be necessary to maintain its design flood protection/flood control capacity. It was estimated, at that time, that major maintenance dredging on the scale currently proposed would be expected approximately every 18 years. The last major dredging of the river occurred consistent with ND-111-00 which included 500,000 cubic yards of dredge to return the channel back to original design depths described in the project approved under CD-29-99. As it has now been approximately, sixteen years since the last major maintenance dredging episode, the current project now proposes to again return the channel back to the previously approved design depths as necessary to provide adequate flood protection to the surrounding communities.

The lower Santa Ana River was most recently dredged by the USACE, prior to turning it over to OCPW for operation and maintenance. However, that dredging episode, although it lowered the channel elevations to accommodate increased flow over the amount prior to the 2004 dredge episode, it did not return the channel to its original design depths. The 2004 dredging was carried out by USACE under Coastal Commission Federal Consistency Negative Determination ND-111-00 and Negative Determination ND-026-02. The original design depths were calculated to accommodate expected storm flows and related expected sediment deposition. Thus, complete maintenance dredging, expected to be necessary approximately every 18 years, has not occurred since 2000. Consequently, the sediment build up in the channel is at or exceeds the point at which federal certification of the channel and related federal insurance is in jeopardy. The *O&M Manual* addresses frequency of sediment removal as follows:

> *"As part of maintenance requirements for the channel design, an upper grade limit was established to identify the sediment removal required from the channel to maintain the design flood protection. Sediment would be allowed to accumulate to the upper grade limit line shown on Plate 1. Once sediment deposition exceeds this limit, the sediment must be removed to the design invert."*

The *O&M Manual* also requires that OCPW "*shall provide at all times such maintenance as may be required to insure serviceability of the structures in time of flood*."

The SARP was constructed by USACE and transferred to OCPW Flood Control Agency as the local sponsor. Responsibilities of the OCPW Flood Control Agency in accepting the transfer of the SARP are described in the *Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual, Lower Santa Ana River Channel*, (USACE, December 1996) (O&M Manual). The O&M Manual requires periodic inspection of the channel to assure it is functioning as intended to prevent flooding. In 2013 the USACE inspected the SAR channel and found that deposition in the channel exceeds the design elevations and approaches the point at which it could become ineligible for federal funding for disaster recovery assistance.

The original SARP incorporated into the Santa Ana River both Talbert Channel and Greenville-Banning Channel within the coastal zone. Positive effects of the original project included an increase of intertidal channel habitat, better tidal circulation, a larger tidal prism, and enhanced fish and invertebrate habitat. Adverse impacts to habitat due to the original project were intended to be offset by construction/enhancement of the 92-acre Santa Ana River Marsh. The Marsh was constructed in

conjunction with the original SARP and has been functioning as habitat for two decades just east of the LSAR.

The USACE was the original project proponent, however, on-going responsibility for the Santa Ana River flood control has transferred to the Orange County Public Works Department, the current project applicant. Because USACE is a federal agency, Commission review of various projects involving the Santa Ana River in the past was processed under the Federal Consistency Program. Now that the project proponent is the County of Orange, Commission review involves the coastal development permit process.

Santa Ana River Permit History
Consistency Determination CD-29-88 was approved by the Commission for the original design of the Santa Ana River on July 15, 1988. CD-29-88 included:

1. Construction of Seven Oaks Dam in the upper canyon;
2. Flood plain management between Seven Oaks and Prado Dams;
3. Modifications of levees at Mill Creek;
4. Construction of a channel on the Oak Street Drain;
5. Modifications of the existing Prado Dam;
6. Channel improvements along Santiago Creek;
7. Channel widening along the lower Santa Ana River.

Although CD-29-88 included review of all these project components, only the last, channel widening along the lower Santa Ana River was located within the coastal zone. In addition, a restoration project consisting of enhancement of 92 acres of salt marsh near the mouth of the Santa Ana River was also a part of this USACE SAR project. Subsequent to the original consistency determination, the Commission has approved a number of additional projects related to maintaining the Santa Ana River channel:

> Negative Determination ND-111-00, U.S. (Army Corps of Engineers (USACE), 2000) to dredge 500,000 cubic yards to restore the river channels to design depth, including disposal in the Santa Ana River Marsh of 20,000 to 40,000 cubic yards of sand to build up a least tern nesting island, and with disposal of the remainder for beach/nearshore replenishment, within Reach 1 (within the coastal zone).
>
> Negative Determination ND-026-02 (USACE, 2002) for vegetation removal and excavation of approximately 40,000 cubic yards of sediment, to restore channels to design depth, with beach/nearshore disposal within the Newport Beach groin field; within Reach 2 (inland of the coastal zone).
>
> Negative Determination ND-034-05 USACE (2005) authorized moving the nearshore disposal site (that had been identified in ND-111-00) approximately one-half mile upcoast.
>
> 5-09-082 (County of Orange, Resources and Development Management Department, 2009) for five year routine maintenance activities within the channel bed, including annual vegetation mowing/herbicide treatment/removal, cleaning of debris basins, inspections and periodic repair of channel hardscape such as retaining walls, dams, and related structures. This permit was never activated and has expired.

Previously considered, but not approved:

Consistency Determination CD-13-81 USACE (1981), for a project similar to the one approved under CD-29-88, but issues with that project were identified including the location of the ocean outlet at Talbert Channel, and the fact that the mitigation plan at that time was still in flux. The Commission objected to this determination, and the project was revised and superseded by the project approved under CD-29-88.

Restoration Area:
Negative Declaration ND-023-12, U.S. Army Corps of Engineers (USACE) authorized dredging of approximately 80,000 cubic yards of material from channels in the Santa Ana River Marsh and disposal of the dredged material in three ways: beach-compatible material would be disposed of in the nearshore at Newport Beach, open ocean compatible material would be disposed of at LA-3 (the Ocean Dredged Material Disposal Site offshore Orange County), and material not compatible for ocean disposal would be disposed of at an upland landfill.

B. HABITAT

Section 30233 of the Coastal Act states, in pertinent 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:

(l) 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 basins, 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 disposal 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 such purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in

Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.
For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where such improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.
(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Section 30236 of the Coastal Act states:

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

Section 30253 of the Coastal Act states, in pertinent part:

New development shall do all of the following:

(a) *Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*

RIVER DREDGING:
Allowable Use
A *Vegetation Survey of the Lower Santa Ana River for the Lower Santa Ana River Maintenance Dredging Project* was prepared for the proposed dredge project (Chambers Group, January 2016). The Vegetation Survey mapped the habitat areas of the Santa Ana River within the coastal zone primarily as Open Waters, with some areas of Pickleweed Mat. The open waters of the LSAR within the coastal zone are tidally influenced, making that area open coastal waters. Thus, the proposed project involves dredging of open coastal waters.

Section 30233 of the Coastal Act limits the dredging within open coastal waters to the seven uses enumerated in that section. Dredging for restoring previously dredged depths in existing navigational channels is one of the uses listed. In addition, Section 30236 of the Coastal Act requires that channelizations and other substantial alterations of rivers shall be allowed for flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development. Development under Sections 30233 and 30236 must also incorporate the best mitigation measures feasible. In addition, Section 30253 of the Coastal Act requires that new development minimize risks to life and property in areas of high flood hazard, such as the subject site.

Major improvements to the flood protection capacity of the Santa Ana River, including combining the Santa Ana River with the Talbert and Greenville Banning flood control channels, as well as widening and deepening the resultant combined channel, was approved by the Coastal Commission under CD-29-88 (described previously). Channelization of the lower Santa Ana River continues to be necessary for public safety and to protect existing development from the high flood hazard that would otherwise be present without the proposed channel maintenance project. According to mapping prepared by the USACE, approximately 6,000 acres on the west side of the Santa Ana River in the City of Huntington Beach will be at risk from flooding without the proposed project, affecting a population of approximately 60,000. In addition, approximately 400 acres on the east side of the river in the City of Newport Beach are also at risk of flooding, affecting a population of several hundred (Exhibit 5). Further, without the proposed project, flooding of the adjacent sewage treatment plant (west of channel) may also occur, likely causing significant ecological damage. The proposed flood control channel maintenance project is necessary to avoid flooding of existing development and populations and thus it is necessary for public safety and to protect existing development, consistent with Coastal Act Section 30236. It is an allowable dredging project pursuant to Section 30233 also. Therefore, the proposed river dredge project is required by Coastal Act Sections 30236 and 30253, thus, it constitutes an allowable use under the Coastal Act.

Mitigation

The habitat value of the Lower Santa Ana River is supported by its presence between two of the most significant coastal marshes in Orange County – Bolsa Chica and Upper Newport Bay. In addition, the restored Huntington Beach Wetlands immediately upcoast of the river, also support the habitat significance of the Santa Ana River and the Santa Ana River Marsh. Also, present in the general vicinity northwest of the site is the Seal Beach National Wildlife Refuge.

The two habitat types impacted by the proposed project are Open Water and Pickleweed Mat. The *Vegetation Survey* describes Pickleweed Mat generally as a highly productive, herbaceous, suffrutescent, salt-tolerant community dominated by pickleweed and forming moderate to dense cover. Specifically regarding the pickleweed within the project site, the *Vegetation Survey* describes the pickleweed mat within the entire 3.5 mile project area as: "*The areas mapped as Pickleweed Mat are dynamic in nature as the deposition of soil from seasonal storm water and tidal flow dictate where plant communities can establish. As a result, the Pickleweed Mat community is largely patchy, interspersed between a mixture of bare sandy soil areas, vegetated areas, and surface water*." Most of the Pickle weed Mat is within the upstream end of the project, outside the coastal zone. However, 3.96 acres of pickleweed mat are present within the coastal zone. Although disturbance will occur during construction, the Open Water habitat will remain after construction is complete. The Pickleweed Mat, however, will be removed. Sections 30233 and 30236 of the Coastal Act require that the proposed project incorporate the best mitigation measures feasible for impacts to habitat.

In addition to the vegetation identified within the river, the LSAR is used by a wide variety of bird species; a total of 30 different species were observed during preparation of the *Vegetation Survey* prepared for the project. Three sensitive bird species occur within the Lower Santa Ana River: the federally listed threatened western snowy plover, the federally and state listed endangered California least tern, and state listed endangered Belding's Savannah sparrow. In addition, the light footed clapper rail, a California fully protected species, has been sighted in the area. The western snowy plover is common on the beach near the site, especially in the winter. And Huntington State Beach, just north/west of the river mouth, is designated critical habitat for the western snowy plover. In addition,

there is also a large California least tern colony adjacent to and west of the mouth of the Santa Ana River. The Belding's Savannah sparrow resides year round in the coastal salt marshes of southern California and they have been known to nest in the Santa Ana River Marsh and in the Huntington Beach Wetlands, both adjacent to the channel. All of these species forage in the river channel, but also forage within the surrounding coastal saltmarshes including the Huntington Beach Wetlands, the Santa Ana River Marsh, and the Bolsa Chica Wetlands.

In its approval of the original channelization project (CC-29-88 (U.S. Army Corps of Engineers)), the Commission found:

> "*An additional 66 acres of intertidal and subtidal marine habitats within the present river channels will be disturbed. However, very few invertebrate species have been found living in the present flood channels, and the project will ultimately result in an increase of such intertidal channel habitat to 101 acres, better tidal circulation, a larger tidal prism, and enhanced fish and invertebrate habitat due to rip rap side slopes.*"

In addition, as part of the original project, the USACE restored 92 acres of coastal salt marsh, known as the Santa Ana River Marsh. The Santa Ana River Marsh, just east of the LSAR, continues to be owned and managed by the USACE since construction in the early 1990s. Of the 92 acre restoration area, the Commission did not consider 8 acres as mitigation, because it replaced the 8 acre coastal salt marsh area that was lost due to the channel widening that occurred with the original SAR channelization project. Thus, of the 92 acre restoration area, 84 acres was considered by the Commission. This Army Corps Santa Ana River Marsh restoration project included creation of a least tern nesting island intended to expand the presence of the endangered least tern in the area by augmenting the existing, protected least tern colony on Huntington State Beach at the mouth of the river. The restoration also included the construction of channels within the marsh with the goal of increasing the benthic invertebrate population, which would then support an increased estuarine fish population, which in turn would support the shorebird population in the area. The restoration also established a tidal connection within the marsh with the construction of two tidegates connecting the marsh to the Santa Ana River. The tidegates were intended to provide wetland flushing by intertidal exchange. The restoration also installed a larger culvert connecting the north and south marsh areas. The tidegates and increased culvert size, along with the expanded river channel, increased the tidal prism, helping to reduce the adverse effect of freshwater runoff on marine invertebrates, as well as decreasing the frequency of water quality problems associated with poor circulation within the marsh.

The 92-acre USACE Santa Ana River Salt Marsh was designed to establish 21.2 acres of subtidal and unconsolidated bottom habitat, 13.5 acres of low marsh habitat, 36 acres of pickleweed-dominated middle-marsh habitat, 9.2 acres of native high marsh vegetation, 2.4 acres of (upland) coastal sage scrub, and the 5.7-acre least tern nesting island. The remainder of the restoration area is comprised of upland, access roads. Restoration of the salt marsh included three levels of salt marsh vegetation zonation: low (0-2 foot elevation), middle (2-4 foot elevation) and high (4-6 foot elevation) marsh zones. The low marsh zones were planted primarily with Pacific cordgrass and the middle marsh zones were planted primarily with pickleweed. High marsh vegetation was not specifically planted, but was expected to be able to establish with wetland indicator species with halophytic affinities. Coastal sage scrub species were also planted in the upland, coastal sage scrub habitat areas. Non-native vegetation was removed.

Construction of the salt marsh restoration began in 1990 and was essentially completed by 1992. Subsequent to initial completion however, modifications and corrections have needed to be implemented within the marsh, including additional excavation (ND-023-12) to ensure proper tidal flushing, soil saturation and viability of salt marsh vegetation. In addition, the first planting within the marsh failed. According to a 1999 monitoring report, subsequent replanting was successful. Monitoring of the restoration marsh indicates that the Pacific Cordgrass and pickleweed are now established. The *Final Environmental Assessment for the Santa Ana River Marsh Dredging Project*, (USACE, July 2012) includes the following information: Light-footed clapper rails were documented in the Santa Ana River marsh for the first time in 2006, when four breeding pairs were reported. Nests have not been found, but six pairs were detected within the marsh in 2011. Least terns are present in the area from mid-April to late August, foraging in the ocean, Santa Ana River, and the marsh. To date, California least terns have not been known to nest on the tern island created in the marsh.

However, the marsh may still be important to least terns for: 1) pre-nesting overnight roosting habitat away from nesting colonies; 2) feeding habitat during nesting; 3) feeding habitat post-fledging, when protected waters are important; and 4) post-fledging roosting or loafing habitat. Wintering snowy plovers may use the Santa Ana River Channel, the mud flats of the marsh, and the beach for roosting. The Coastal California gnat catcher may use the marsh as an infrequent stopover habitat for dispersing individuals or as foraging habitat. Pairs of Belding's savannah sparrow have been observed in the pickleweed within the marsh. Belding's savannah sparrow breeding territories were first documented in the Santa Ana River Marsh in 1996, when 17 territories were observed. Territory numbers have fluctuated in subsequent years (36 in 2001; 34 in 2006; and 29 in 2010). No work is proposed in the marsh as part of this project.

No sensitive birds nest within the Santa Ana River channel, or within any of the proposed deposition locations. However, the timing of the proposed project may create adverse impacts on nesting of sensitive bird species known to be present in the general vicinity of the project area. The bird breeding season is generally March through August, but can occur as early as January and as late as April 30. If avoidance of the bird breeding season is not possible, breeding bird surveys must be conducted prior to commencement of construction by a qualified environmental resources specialist. If any sensitive bird species nests are identified, no work shall be conducted within 300 feet of the active nest until any young have fledged and the nest is no longer in use. In addition, the presence of a qualified environmental resources specialist monitor during removal of all river shoals, would help to avoid or minimize disturbance to any of the sensitive bird species that may forage on the sandy shoals that support the pickleweed mat. In order to assure that the project does not adversely impact sensitive bird species, Special Condition 3 is imposed which limits the timing of project activities relative to the bird nesting season. In addition, Special Condition 2 is imposed which requires the presence of a qualified environmental resources specialist monitor during activities that include removal of the shoals supporting pickleweed mat.

Sections 30233 and 30236 require that dredging and channelization projects incorporate the best mitigation measures feasible. Pickleweed mat habitat within the channel is dynamic and fluctuates with conditions within the river. Thus, it is expected to reestablish as conducive conditions within the channel develop. In addition, the 84-acre salt marsh restoration project associated with the original channelization project was constructed with the intent to address the long term maintenance activities necessary to maintain the channel at original design depths. Thus the Santa Ana River Marsh Restoration project implemented by the USACE in conjunction with the original channelization continues to provide the mitigation for the proposed maintenance project. Also, of the habitats in the

channel impacted by the proposed dredge project, Open Channel will return with completion of the dredging. Moreover, the pickleweed matt habitat that will be lost, is well represented in the Santa Ana River Marsh restoration area. In addition, the original channelization project increased the 66 acres of intertidal and subtidal habitats to 101 acres. Based upon all of these considerations, the Commission finds that the proposed project has incorporated the best mitigation measures feasible, consistent with Sections 30233 and 30236 of the Coastal Act.

Comprehensive Eelgrass Management Plan

Eelgrass (Zostera marina) is an aquatic plant consisting of tough cellulose leaves which grows in dense beds in shallow, subtidal or intertidal unconsolidated sediments. Eelgrass is considered worthy of protection because it functions as important habitat and foraging area for a variety of fish and other wildlife. For instance, eelgrass beds provide areas for fish egg laying, juvenile fish rearing, and waterfowl foraging. Eelgrass can be a prolific species where suitable habitats occur. The habitat requirements of the species are shallow, stable soft bottom environments with marine or near marine salinities, good tidal flushing, abundant light reaching the bottom, and generally cool waters. Within the LSAR, eelgrass has historically been very intermittent and minimal in its occurrence within the tidally influenced portions of the Santa Ana River (generally, downstream of the Adams/Victoria Bridge). Due to salinity, temperature, and depth/sunlight requirements, this downstream segment of the river is the only area of the river that is ever suited to support eelgrass.

Although ephemeral, currently eelgrass is abundantly present in the project area of the river. In order to address the presence of eelgrass, the applicant has submitted a Comprehensive Eelgrass Management Plan (*Lower Santa Ana River Sand Management Project Eelgrass Comprehensive Management Plan, Merkel & Associates, March 2016(Eelgrass Management Plan*). The Comprehensive Eelgrass Management Plan mapped 31,420 square meters of eelgrass within the project site (Exhibits 6 & 7). Typically, the Commission requires that any project that impacts eelgrass, must replant eelgrass on-site (or as near thereto as is feasible) at a ratio of 1.38:1, consistent with the National Marine Fisheries Service California Eelgrass Mitigation Policy and Implementing Guidelines (October 2014). However, in this case, that would be difficult due to the fact that the extent of eelgrass currently present virtually occupies all area suitable for supporting eelgrass, leaving no area to accommodate the typically required increased replanting ratio. The nearest areas with conditions suitable to support eelgrass, the Huntington Beach wetlands or Newport Bay, are not practical. Such opportunities within Newport Bay are at already earmarked to support mitigation needs for impacts within that system. And eelgrass is already at capacity within the adjacent Huntington Beach Wetlands.

In addition, although currently eelgrass is present in abundance within the river, this circumstance is atypical. The Eelgrass Management Plan evaluated the presence of eelgrass over the last 15 years for which such information was available. The evaluation included review of aerial photos and available directed eelgrass surveys. This review suggests that eelgrass has been only intermittently present in the LSAR for several years, with extirpations and recolonization events occurring. Figure 4 of the proposed Eelgrass Management Plan (Exhibit 7) is a chart depicting the status of eelgrass in the project area from 2000 through 2015, where information was available (no information was found for the years 2001, 2003, 2006, 2010 and 2011). Nevertheless, the general presence of eelgrass may be extrapolated from the information available. Between the years 2000 and 2009 (for the years with information available), the maximum area coverage of eelgrass was 119 square meters, with the other yearly area coverages being 0, 4, 0, 0, and 11 square meters. It appears, from the information available, that the current level of eelgrass in the river is anomalous. This is likely due to a number of factors, including: the river is a dynamic environment, high flows and erosion can wash out channel

vegetation, including eelgrass, but where high flows have been absent, such as during drought years, sedimentation in the channel creates conditions (shallower depths) conducive to an abundance of eelgrass. Such has been the case in the recent drought years. In addition, the need to maintain the flood protection capacity of the river requires periodic sediment removal, which also affects the presence or absence of eelgrass. The LSAR has not been dredged since the mid-2000s, and even then it was not restored to original design depths.

Regarding the dynamic factors effecting eelgrass establishment, the proposed Eelgrass Management Plan states:

> *"Eelgrass can be a fairly prolific species under the correct environmental conditions. Under good conditions, plants spread both by vegetative growth of individual clones as well as by seedling recruitment. Seedling recruitment is a critical factor in occupying extensive space in an unstable environment. However, eelgrass typically takes between one and three years to mature to a sexually reproductive condition from seedlings. As a result, highly variable environments tend to not support extensive eelgrass."*

Another factor to consider is the fact that the NMFS mitigation standard that is typically imposed by the Commission recognizes the ephemeral nature of eelgrass, requiring eelgrass surveys, during the growth period, just prior to commencement of construction. Mitigating for the amount of eelgrass present just prior to construction can create an all or nothing situation. For example, in the case of the Santa Ana River, if heavy rains were to occur between the last eelgrass survey and the survey just prior to commencement of construction, and the heavy rains created heavy flows within the river, it is possible that the present eelgrass would be washed away. Under such a scenario, no mitigation would be required, even though there had been 31,420 square meters of eelgrass in the river prior to the high flow event.

All eelgrass within the project site could be lost with the proposed dredging. The Comprehensive Eelgrass Management Plan proposed by the applicant recognizes the unique conditions of eelgrass in the LSAR. The Comprehensive Eelgrass Management Plan states:

> *"Prior to the present drought conditions, the LSAR has supported an estimated 22 m^2 (<0.01 acre) of eelgrass over the 6 periods when mapping was done from 2000-2011. During the last 4 years (2012-2015), the LSAR averaged 11,555 m^2 (2.86 acres). As an overall average, the LSAR has supported an average of 4,635 +/- 10,282 m^2 (1.15 +/- 2.54 acres) of eelgrass (+/- 1SD) over the period 2000-2015. This high variability is fairly unique to enclosed eelgrass systems in southern California and is related to the characteristics of the LSAR's design as a tightly confined flood control channel.*
>
> *While the history of eelgrass in the LSAR is spotty, eelgrass is likely to be a recurrent ephemeral resource that is both impacted by dredging that removes sands on which eelgrass grows and which is dependent upon dredging to remove the developing shoals and sustain a shallow marine environment with good flushing in the lower river. The intermittent presence of eelgrass within the LSAR is a unique condition with respect to most occurrence of eelgrass in southern California. While eelgrass is recognized as being a highly dynamic habitat, its presence from year to year is generally predictable and predicated on prolonged environmental conditions and environmental stability. With rare exception, eelgrass distribution patterns normally change from year to year in a predictable manner based on the*

environmental stressors. Conversely, eelgrass within the LSAR is defined by unpredictable extirpation and recolonization events driven by the unique environment within the LSAR that has been established by the design of the flood control channel to specifically convey major storm flows in the most space efficient manner."

Thus, for the reasons described above (the dynamic nature of the river channel, the lack of on-site or nearby areas able to accommodate increased eelgrass plantings, and because the LSAR is a critical element of the flood management infrastructure of the region that was constructed and developed with a documented need for recurrent maintenance), the applicant is proposing an eelgrass management plan, rather than a replanting plan. The goals of the proposed Comprehensive Eelgrass Management Plan are:

- Ensure timely completion of maintenance activities within the LSAR as required for flood control functions to be met;
- Provide a means of ensuring that maintenance dredging does not result in long-term loss of eelgrass from the Santa Ana River;
- Ensure that eelgrass can occur in the channel concurrent with the flood control functions of the channel;
- Provide a means of reintroducing eelgrass to the channel following maintenance dredging to ensure that recolonization, if required, occurs broadly in the LSAR at the earliest possible time.

These measures are intended to expedite the spread of eelgrass within the LSAR after dredging operations are complete. The intent is that this will be of greater value than reestablishing a particular scale of eelgrass that matches impacts at the time of dredging. This is because there is no guarantee that 1) there will be substantive eelgrass in the channel at the time of impact (dredging), and 2) that the restored eelgrass will persist over time given the nature of the channel conditions.

The *Comprehensive Eelgrass Management Plan* proposes to take pre- and post-dredging eelgrass surveys, consistent with the standards of the NMFS California Eelgrass Mitigation Policy and Implementing Guidelines (October 2014). Then, one year following completion of dredging, a third eelgrass survey will be completed to determine whether eelgrass has established within the channel and to determine what areas within the channel have developed new shoaling to the levels that would support eelgrass reestablishment. Areas that are suitable for eelgrass would be planted with bareroot eelgrass transplant units taken from the adjacent Orange County Flood Control District Talbert and/or Huntington Beach channels. These plantings will be conducted during the first year following the third survey (described above), up to 4,635 square meters (1.15 acres) of planting area.

The proposed management plan recognizes the variability of the channel, and assures that planting to "kick-start" eelgrass when conditions are suitable will occur regardless of whether there is any eelgrass in the channel at the time of the pre-construction survey. The proposed eelgrass replanting is based on the average eelgrass coverage history (based upon information available between 2000-2015). However, during this period, the overall presence of eelgrass has been highly skewed toward very limited coverage. For this reason, no area-based establishment goals are proposed. The proposed management plan notes that the proposed eelgrass plantings do not alter maintenance triggers for flood control dredging within the LSAR nor do they create any conservation overlays that would affect the opportunity to complete dredging under the County's maintenance commitment to this necessary flood control facility.

The proposed *Comprehensive Eelgrass Management Plan* is intended to address the uncertainty of eelgrass conditions at the time of project impacts and to provide a mechanism that recognizes the ephemeral channel conditions but that is still beneficial to eelgrass by committing to replanting eelgrass where suitable conditions occur. It also acknowledges the necessity of maintaining the channel as required for flood protection. The proposed *Comprehensive Eelgrass Management Plan* has been reviewed and accepted by staff of National Marine Fisheries; U.S. Army Corps of Engineers; California Department of Fish & Wildlife; and, the Coastal Commission's staff ecologist. The management plan will assure the presence of eelgrass within the channel whenever conditions necessary to support it are present. It avoids the "all or nothing" approach that, for the reasons discussed above, does not work within the LSAR due to its required flood protection function. For these reasons, the Commission finds that the proposed *Comprehensive Eelgrass Management Plan* incorporates the best mitigation measures feasible, consistent with Sections 30233 and 30236 of the Coastal Act. Special Condition 4 is requires that the proposed *Comprehensive Eelgrass Management Plan* is carried out as proposed.

Staging Areas

A document titled *Vegetation Survey of the Lower Santa Ana River for the Lower Santa Ana River Maintenance Dredging Project* was prepared for the proposed dredge project (Chambers Group, January 2016). The *Vegetation Survey* mapped the habitat areas of the proposed project, including the staging areas. The proposed project includes three staging areas: the west staging area is located outside the coastal zone; the east staging area is located at the southern boundary of Talbert Regional Park, adjacent to the Santa Ana River, and the beach staging area located adjacent to and seaward of Pacific Coast Highway between the Santa Ana River and existing residential development of west Newport. Of the two staging areas located within the coastal zone, the *Vegetation Survey* mapped the beach staging area as barren, with no habitat present. With implementation of construction Best Management Practices, no impacts are expected at the beach staging area. Special Condition 13 identifies construction Best Management Practices to be implemented with the project.

By contrast, the east staging area (Exhibit 8), located in Talbert Regional Park was mapped in the *Vegetation Survey* entirely as Disturbed Alkali Heath Marsh. The Disturbed Alkali Heath Marsh East Staging area occupies 2.96 acres and is described in the *Vegetation Survey* as follows:

> *"Disturbed Alkali Heath Marsh primarily consists of alkali heath (Frankeniasalina), with lesser amounts of other herbs, occasional shrubs, and non-native species of 25 percent or more cover. This cover is open to continuous and most often occupies areas adjacent to coastal salt marshes, brackish marshes, alkali meadows, or alkali playas. Soils tend to be saline and sandy, but can vary to clayey alluvium as well (Sawyer et al., 2009). In addition to alkali heath, other species in this community on site included native quailbush or big saltbush (Atriplexlentiformis), and non-native common ragweed (Ambrosia artemisifolia) and poison hemlock (Conium maculatum). Disturbed Alkali Heath Marsh is interspersed with Barren soil areas in the staging areas within Talbert Park at an approximate 50/50 ratio."*

The East Staging area is immediately north of the inland extent of the Santa Ana River Marsh restoration area. Section 30233 of the Coastal Act regulates development within wetlands including disturbed marshes. As discussed earlier, allowable uses under Section 30233 are limited to the specific uses identified in that Coastal Act section. Construction staging is not one of the allowable uses. In addition, Section 30233 requires that development within wetlands/marshes be the least environmentally damaging feasible alternative. Evaluation of alternatives to the proposed East Staging

Area location has not been provided. The *Vegetation Survey* concludes that no impacts to habitat in the staging area are anticipated, stating:

> *"There are no anticipated impacts to sensitive vegetation or vegetation communities within the proposed contractor's staging areas. All three staging areas consist of non-native or disturbed vegetation, or lack any vegetation and consist of bare sand/soil."*

The Coastal Act defines wetland as "*lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*" Development in wetlands, even if in a disturbed condition, is subject to increased scrutiny under 30233 for a number of reasons. Wetlands often provide critical habitat, nesting sites, and foraging areas for many species, some of which are threatened or endangered. In addition, wetlands can serve as natural filtering mechanisms to help remove pollutants from storm runoff before the runoff enters into streams and rivers leading to the ocean. Further, wetlands can serve as natural flood retention areas. Another critical reason for preserving, expanding, and enhancing Southern California's remaining wetlands is because of their scarcity. As much as 75% of coastal wetlands in southern California have been lost, and, statewide up to 91% of wetlands have been lost.

For purposes of classification as wetland, the Commission typically considers that if one or more of the following attributes are present, the area is a wetland: 1) at least periodically, the land supports predominantly hydrophytes, 2) the substrate is predominantly undrained hydric soil, or 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season each year. Thus, if an area predominantly supports wetland vegetation (hydrophytes), it is considered by the Commission to be wetland. A wetland delineation was not performed for the east staging area, so the presence of wetland soils or wetland hydrology is not known. However, only one of the three attributes need be present to consider an area to be wetland. Thus, because the East Staging Area supports predominantly hydrophytic vegetation, as described in the *Vegetation Survey* - enough to categorize the area as alkali heath marsh (even though disturbed), constitutes wetland and is thus subject to Section 30233 of the Coastal Act.

In this case, the alkali heath marsh at the East Staging area is in close proximity to Santa Ana River and the Santa Ana River Marsh. The *Vegetation Survey's* conclusion that no impacts are anticipated, even though the area supports alkali heath marsh is not supported in the information submitted. Construction staging always included some impact and disturbance due to the use of the area by heavy machinery and the presence of construction materials. The *Vegetation Survey* concludes that no impacts to sensitive vegetation or vegetation communities are anticipated in the project staging areas, including the east staging area, even though, disturbed marsh is identified as the habitat for the entire east staging area.

As stated earlier, Section 30233 requires that development within a wetland must be an allowable use, the least environmentally damaging alternative, and must provide feasible mitigation to minimize adverse environmental effects. Construction staging is not one of the uses allowed under Section 30233. Although analysis of alternatives to the proposed East Staging area has not been provided, it appears that less environmentally damaging alternatives may exist. For example, all construction staging could be from the proposed West Staging area, which is located outside the coastal zone and is identified in *Vegetation Survey* as ornamental landscaping/ruderal. Another potential alternative would be to locate construction staging immediately across the SAR from the proposed East Staging area, at

the inland extent of the Orange County Sanitation District facility, within an area that appears to be a parking lot and bare ground. Or, there may be areas within Talbert Regional Park that are not sensitive habitat from which construction staging may be appropriate. Possibly, all staging may be able to be accommodated from the two proposed staging areas that do not result in wetland impacts. Another potential option may be to conduct construction staging from the maintenance road atop the levee. This option would need to coordinate use of the public trail with construction staging so as not to interfere with public use of the trail. However, because there are public trails atop both levees in this area, it may be possible to establish temporary public access detours. In any case, no evaluations of any of these possible alternatives or others have been submitted. There may be additional alternatives that could be considered as well. In any case, the Commission cannot find that the proposed location for the East Staging area is the least environmentally damaging alternative because it will be located within a wetland, inconsistent with Section 30233 of the Coastal Act.

Special Condition 6 is imposed which requires revised construction staging plans that eliminate the east staging area from the project and that demonstrates that no construction staging will occur within sensitive habitat and/or wetland areas. Only as conditioned, can the Commission find that the proposed project's construction staging is consistent with Section 30233 of the Coastal Act.

DEPOSITION

Section 30233(b) of the Coastal Act states:

> *(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruptions 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.*

Section 30233(d) of the Coastal Act states:

> *(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

As described earlier, suitable material removed from the Santa Ana River channel is proposed to be deposited at area beaches in the general project vicinity. The goal of the proposed beach deposition is to replenish beach sand area within the project vicinity. Beach replenishment will enhance public recreational opportunities and public access at the receptor beaches and will also increase shoreline protection of properties on the oceanfront by increasing the amount of sand within the littoral zone. Deposition on Balboa Island will support existing bulkheads that support existing development including the public walkway that rings the perimeter of the island. Sections 30233 (b) and (d) the use of dredged spoils/materials for beach replenishment, particularly materials removed from flood control facilities, such as the subject materials. The materials proposed to be dredged from the Santa Ana River historically would have been deposited naturally on the downcoast beaches. Although two of the

five sites are upcoast of the river mouth, the proposed project would deposit sediment from the river onto nearby beaches, somewhat similar to the natural process that was altered with channelization and inland development.

Currently, the natural sediment deposition rate along southern California beaches is much lower than historic rates. This decrease in natural sedimentation is due to a variety of reasons, including development of dams and other human alterations of rivers. Sediment that would have been deposited into the littoral zone becomes trapped and never reaches the coast. In addition, Southern California has a long history of beach management to provide recreational opportunities and to provide protection of existing development. Local beach profiles reflect these decreased sediment deposition conditions, showing signs of erosion. Beach replenishment programs have been implemented to offset this deposition shortfall at various beaches throughout southern California, including in San Clement (5-15-2056), Carlsbad (6-14-1128), and Encinitas (6-08-110-A2) in an attempt to allow and expedite beach replenishment. It is impossible to say how long any particular deposition project would remain intact on a beach, given the possible variations in conditions at the time of deposition. However, during the time the sand remains on the beach, the public will have the benefit of wider sandy beaches and protection of existing development increases. In addition, any sand deposited on the beach will become part of the littoral cell system.

The proposed upper limits of dredge material placement at each of the potential receptor sites are:

- West Newport – up to 1,100000 cubic yards (i.e. up to the entire dredge amount)
- Seal Beach East Beach – up to 100,000 cubic yards
- Surfside/Sunset Beach – To Be Determines, not yet known
- Huntington Harbour
    - Davenport Beach: 4,500 cubic yards
    - Humboldt Beach: 4,500 cubic yards
    - Kayak Beach: 2,000 cubic yards
    - Seabridge Beach: 5,000 cubic yards
    - Trinidad Beach: 1,500 cubic yards

- Newport Harbor
    - China Cover: 20,000 cubic yards
    - Balboa Island: 30,000 cubic yards

The proposed deposition will include suitable materials from the entire project including both material from within the coastal zone as well as material from inland of the coastal zone up to the inland extent of the proposed project (approximately 3.5 miles inland of the ocean outlet, to just upstream of the Adams Avenue bridge). The majority of beach deposition is expected to occur in the nearshore littoral zone at West Newport Beach. If additional materials are available, additional deposition may occur at any of the following locations: Surfside/Sunset beach; East Beach in Seal Beach; Balboa Island and China Cove in Newport Harbor; and five pocket beaches in Huntington Harbor: Davenport Beach, Humboldt Beach, Trinidad Beach, Kayak Beach and Seabridge Park Beach (Exhibit 4).

The beaches on the shoreline of Balboa Island are included as potential locations to deposit the dredged matter that meets specific grain size standards under the coastal development permit and other agency's approvals. However, the applicant's Newport Harbor map for the proposed project also identifies Grand Canal, a channel that bisects Balboa Island, as a potential deposition site. Grand Canal is not an appropriate site for nourishment at this time. It is a confined navigation channel. Any sand

placed in the channel would adversely impact water depths and boater access. The channel is currently very shallow, and the City of Newport Beach has applied for a coastal development permit (Application No. 5-15-2019) to dredge Grand Canal. In addition, Grand Canal is the site of significant eelgrass beds, approximately one acre in total area. Therefore, Grand Canal is not an approved location, under this permit, for deposition of the dredged matter from the Santa Ana River. Special Condition 11 prohibits deposition to occur within Grand Canal on Balboa Island.

The total amount of material to be removed from the Santa Ana River is approximately 1.1 million cubic yards, of which 430,000 cubic yards will be removed within the coastal zone. Of that figure, only materials deemed suitable will be deposited on the beaches, thus the total amount of deposition is not specifically known, but it will not exceed 1.1 million cubic yards (upper limits at each potential receptor beach are outlined above). The potential duration of the deposition events will not extend beyond the Santa Ana River dredge/excavation project, which is expected to be complete within approximately one year of commencement of construction. The potential beach deposition time frame is not open-ended. The receiver sites are located within the cities of Seal Beach, Huntington Beach and Newport Beach. Letters agreeing to accept the suitable dredge materials upon City beaches have been received from each of the receiver site Cities.

The majority of deposition will occur in the nearshore littoral zone at West Newport Beach (Exhibit 4). This nearshore zone receiver site is bounded by depths between –10 and –30 mean Lower Low Water (MLLW). Suitable deposition materials at the West Newport nearshore area would be moved using a pipeline and/or dump scow. Materials would be screened for vegetation and debris and then would be 1) pumped to the West Newport nearshore area via a pipeline placed on the ocean floor or buried on the dry sand beach and/or 2) piped onto a dump scow (barge) positioned at the ocean outlet which would transport the material to be deposited at the receiver site. If a pipeline is used, the outlet pipe would be repositioned periodically to spread the material in order to achieve the specific proposed fill design. A temporary sand berm may need to be constructed across the river just upstream of the east tide gates to the adjacent Santa Ana River Marsh for the purpose of holding back the tide upstream of the berm, which would allow more dry material to be moved using traditional grading equipment. No equipment is to be used on the onshore beach adjacent to the West Newport nearshore deposition area.

Suitable material to be deposited at the other opportunistic receiver sites would be moved by dump scow and hydraulically piped onshore or transported via trucks and placed onshore. If a dump scow is used, material would again be hydraulically pumped from the lower Santa Ana River to a dump scow positioned at the ocean outlet which would then be transported to one or more of the potential receiver sites where it would be pumped from the scow to the onshore zone. Sand containment dikes would be constructed on the beach to receive and dewater the slurry material. Alternatively, the material could be transported to one or more potential receiver sites via trucks hauling the suitable, screened material. Bulldozers would ultimately spread the material along the beach per the proposed project fill design.

The proposed beach replenishment component of the proposed project is consistent with and implements many of the recommendations of the Commission's recently approved Sea Level Rise Policy Guidance document (SLR Guidelines). Sea level rise will result in changes to sediment availability on California beaches. Higher water levels and changing precipitation patterns could change erosion and deposition patterns. Loss of sediment could worsen beach erosion and possibly increase the need for beach nourishment and decrease the effectiveness of beach nourishment if sand is quickly washed away after being placed. Beach nourishment is a "soft" armoring solution which can help to protect the coastline from coastal hazards without the need for a permanent, armored shoreline

protective device. The Commission's SLR Guidelines recommend that local jurisdictions establish beach nourishment programs and protocols. The subject beach replenishment project includes many of the suggested protocols, including criteria for design, construction and management of the nourishment area, sand compatibility specifications, and identification of environmentally preferred locations for deposits. The SLR Guidance suggests that the Commission produce additional guidance documents related to beach nourishment. The monitoring results of the proposed project required by Special Conditions will further the Commission's understanding of beach nourishment projects and be useful in refining future beach nourishment programs throughout the state.

Sediment Analysis

The dredge materials were evaluated in the *Final Sampling and Analysis Plan Results Report (SAP) (Moffatt & Nichol, September 2015)* The SAP took a total of 36 borings, representing 10 Composite Areas, throughout the project dredge site (including areas of the project located within and outside the coastal zone) in March 2015. Grain size and chemistry testing was performed on each of the 10 composited samples. Grain size testing was also performed at each of the potential receptor sites. Sampling of the receptor sites was conducted at West Newport Beach (three transects at 34th Street, 42nd Street and Orange Street, eight samples were taken along each of the three transects); Seal Beach (two transects at East Dolphin Avenue and 13th Street, nine samples along each transect); Huntington Harbour (15 samples were collected on dry beach at high (beach berm), medium (foreshore), and low (water line) elevations at each of the five potential receptor site pocket beaches: Davenport, Humboldt, Kayak, Seabridge, and Trinidad; Surfside-Sunset (prior [2001] samples collect at the east jetty, Anderson Street and 19th Street at eight locations along each of the three transects); Newport Harbor (a total of 28 samples were collected on dry beach at high (beach berm), medium (foreshore), and low (water line) elevations along two transects at China Cover and at five beaches around Balboa Island (East Bay Front, South Bay Front [Little Island], South Bay Front [Balboa Island], North Bay Front, and the Grand Canal). In addition, beach profiles were taken at each of the receptor site locations, with multiple transects taken at each site.

The samples were analyzed consistent with USACE and USEPA established protocols for the disposal of dredged material as outlined in the Inland Testing Manual (USEPA and USACE 1998). Sand Compatibility Opportunistic Use Program (SCOUP) guidelines (M&N 2006) were also used to evaluate the materials' compatibility for potential beach placement options. The SAP concluded that the lower Santa Ana River dredge material is physically compatible (i.e. grain size) for placement at each of the proposed receiver sites. With regard to chemical testing, the SAP concluded:

> *"The results of the chemical testing found all Composite Area samples to be below ERL values with the exception of composite Areas D, E, F and I. Slight exceedances of the 4,4'-DDE, Total DDT and bis-(2-Ethylhexyl)phthalate ERLs were identified in these areas. Observed values were well below the ERM values; thus, are not considered significant in terms of potential biological effects. In addition, LSAR contaminant concentrations are low compared to human health screening levels, with the exception of arsenic. Arsenic levels are not elevated above background levels."*

Overall, the SAP concludes: *"In summary, with the exception of the lower clay layer, both physical and chemical testing indicated the lower Santa Ana River dredge material is suitable for placement at the proposed beach receiver sites."*

Clay Layer

Within the project area of dredging in the coastal zone, a lower clay layer exists approximately between Stations 17+00 and 50+ 00. Because it is unsuitable for beach deposition, it is important to assure that no clay material is deposited on the any of the proposed receiver sites. The applicant has proposed that this clay layer will be left in place within the channel and not included in beach deposition. This would be accomplished in some areas by excluding overdepth dredging[1] in order to avoid the clay layer. Other areas of clay layer will be removed and disposed of appropriately at inland sites. Upstream, outside of the coastal zone, any material not suitable for beach deposition will be removed from the channel with traditional earth moving equipment such as bulldozers and excavators, allowed to dry, and then loaded into dump trucks for appropriate disposal outside the coastal zone. The SAP describes the method for assuring the clay is not included in any part of the proposed beach deposition as follows:

> *"A supplemental investigation was performed to further define the limits of the clay layer withn the dredge prism and is included as Addendum 1. It was determined that a thin layer of clay exists within the dredge prism in Composite Areas C, D, E, and F. The clay layer is aobut 1 to 3 feet above (shallower than) the design invert in these locations. A very thin, 0.3-foot clay layer may also be within the dredge prism in Composite Area J. The clay elevation was determined to be at the invert elevations in many areas in Composite Areas H and I. Excluding overdepth dredging at these locations would avoid this layer.*
>
> *The clay material is not suitable for beach nourishment and thus will be disposed at an approved upland disposal location. The engineer will work closely with the contractor to separate the clay materials from the beach compatible materials during construction. OC Public Works will be utilizing a Construction Manager at Risk (CMAR) contract for the construction of the project. This method involves the contractor from the planning stage to project construction and ultimately guarantees the cost of the construction work. The CMAR program will be greatly beneficial for the specialized handling and disposal of clay materials dredged from the LSAR. The engineers will work with the CMAR contractor to define the appropriate methods to delineate and dispose of this material separately at an upland location. In order to segregate clay materials, the engineer will provide the CMAR contractor:*
>
> - *All likely clay elevations to be included in the plans so the construction contractor is aware of where clay is likely to be encountered.*
> - *Develop a thorough definition of clay, based on the results of the SAP, which can be used in the field to identify incompatible material.*
> - *Utilize a third party watchstander, e.g. geotechnical professional, to oversee operations to ensure proper characterization of dredge material.*
> - *Produce a Standard Operating Procedure (SOP) for the encounter of clay regarding operation, sorting, and holding location."*

The subject SAP was reviewed at a meeting of the Southern California Dredged Material Management Team (SC-DMMT) on September 23, 2015. Notes from that meeting indicate that the SC-DMMT had concerns with regard to assuring the clay layer would not be placed on receptor beaches, and questions regarding impacts to the biology of the receptor sites. It was acknowledged at that meeting that both topics would be addressed during the permit process.

[1] The project generally includes a two-foot over-dredge allowance to account for a 20% contingency for ongoing sedimentation that has occurred since the 2013 survey of the channel was completed and for incidental sloughing of side slopes during construction.

However, no specific plan has been submitted that incorporates the necessary steps, outlined in the SAP (cited above), to assure that the problematic clay layer will be excluded from beach replenishment materials. However, it appears to be the applicant's intent that such a plan will be developed and utilized during construction, per the language of the SAP and the SC-DMMT meeting notes (9/23/16). The notes from the SC-DMMT meeting indicate that this is expected to occur during the current permiting process. Therefore, a Special Condition 7 is imposed that requires submittal of a specific written plan that outlines how the clay layer will be excluded from the beach replenishment materials, including but not limited to, identifying the clay location on the plans, developing a thorough definition of clay for use in the field, identifying and providing qualifications of the third party watchstander/geotechnical professional to oversee construction operations particularly with regard to identifying and disposing of the clay layer, and development of a *Standard Operating Procedure*, to be implemented when clay is encountered. Only as conditioned, can the proposed beach replenishment project be found to be consistent with Section 30233(d) of the Coastal Act which requires that adverse environmental effects of beach replenishment be minimized.

Depostion Sites: Eelgrass & Other Habitat

West Newport Nearshore:

Biological Assessments for each of the beach receptor sites were prepared. For the West Newport nearshore site, the location where most, if not all, of the deposition is expected to occur, a report titled *Results of Surveys of Nearshore Marine Habitats Offshore the Santa Ana River*, (Chambers Group, July 2015) was prepared for this main deposition site (Assessment). Regarding the West Newport disposal site, the Assessment states:

> *"The area offshore the Santa Ana River mouth is mostly sand; however, the nearshore area supports 3 small rocky outcrops that have considerable habitat value. They are covered by gorgonians as well as other sessile organisms (sand tube worms, anemones, bryozoans). Their vertical structure attracts reef fish, such as garibaldi, which make nests on hard substrate. Although no lobster were seen during the February 4 survey, lobster would be expected to use the holes and crevices of the reefs for shelter. Reef organisms could be damaged by the placement of pipelines or by the direct deposition of sediment. It is recommended that pipelines not be placed on top of any of the outcrops and that if a barge is used to drop sediment into the nearshore, that it avoids discharging sediment on or in the immediate vicinity of the reefs."*

Other than the three rocky outcrops, the Assessment identified cobble beds, shell hash/coarse sand, and sandy habitat types within the survey area, stating that the majority of the survey area was classified as Marine: Subtidal: Unconsolidated Bottom. Only the rocky outcrops were identified as having habitat value. The applicant has indicated that "*a dredge/excavation plan with equipment to be used and pipe route will be provided by the contractor for approval prior to start of construction.*" It is important that the placement of the dredge materials at the West Newport nearshore site avoid impacts to the habitat associated with the three small rocky outcrops referenced in the Assessment. The applicant may also place the dredged material using a scow, in addition to a pipeline. There is abundant space to place the pipeline or the scow and pipeline appropriately. However, if the equipment is placed inappropriately, adverse impacts may result to the rocky outcrops and the considerable habitat associated with them. The Dredge/Excavation Plan, referenced by the applicant, must be reviewed in order to evaluate equipment placement and assure protection of the rocky outcrop habitats. However, because it will provide details on deposition rather than dredge/excavation, it would more appropriately be called a Deposition Plan. Special Condition 5 requires preparation and submittal for review by the Executive Director of the applicant's Deposition Plan [Dredge/Excavation Plan] for the West Newport nearshore

deposition area. Only as conditioned, can the proposed beach replenishment project be found to be consistent with Section 30233(d) of the Coastal Act which requires that adverse environmental effects of beach replenishment be minimized.

Surfside/Sunset Beach
Deposition at Surfside/Sunset Beach would be placed on the dry sand. A Biological Assessment was prepared for the subject site titled *Marine Biological Resources Assessment Surfside-Sunsset Beach Beach Nourishment Project* (Coastal Resources Management, July 13, 2014)[2] (Assessment). Regarding habitat types in the project area, the Assessment identified remnant coastal sand dune vegetation and ruderal vegetation in the northwest corner of the site. In addition, the Assessment acknowledges that grunion are known to lay their eggs in the wet beach sands during the highest spring tides between late February or early March, to as late as early September. In addition, the Assessment recognizes that the western snowy plover, a federally listed threatened species and State species of special concern may also be present at this site, but is not likely to breed there.

In addition to the more recent Biological Assessment referenced above, an earlier Biological Assessment was prepared for a beach deposition project. The earlier Assessment is titled *Final Environmental Assessment for Surfside-Sunset Beach Nourishment Project* (USACE, July 2008). This Assessment considered the potential effects on marine biological resources from placement of dredged materials onto the dry sand beach area of Surfside-Sunset Beach, where the more recent (2014) Assessment considered temporary placement of a pipeline across the beach area in conjunction with a nearshore deposition project. The earlier project more closely resembles the proposed project in that it would also place dredged materials on the dry sand. The 2008 Assessment concluded:

> *"Disposal activities will have impacts on organisms that use the beach. Sandy beach invertebrates such as beach hoppers and sand crabs will be crushed and/or decimated. These species are well adapted to periodic disturbance. Recovery of the community will be expected to occur rapidly and within a year. Impacts to beach organisms will be adverse, but insignificant."*

No long term or permanent impacts are anticipated to the dry sand beach habitat from beach deposition, however, care must be taken that the remnant dune habitat in the deposition vicinity is not adversely impacted. Thus, Special Condition 1 is imposed which requires the presence of an environmental resources monitor to identify, flag and direct deposition and deposition related activities away from the remnant dune habitat. The monitor shall also determine the presence or absence of the western snowy plover in the vicinity of deposition. If the western snowy plover is present on the beach, measures shall be implemented to assure no harm to them. Such measures may include delaying deposition until the plovers have departed the area. As is stated in the Assessment, western snowy plovers are not expected to nest on the Surfside-Sunset Beach beach.

East Beach in Seal Beach
Deposition would occur on the dry sand. A Biological Assessment was prepared for the subject site titled *Update of the Intertidal and Subtidal Habitat Bio-assessment Information for the City of Seal Beach East Beach Nourishment Project* (Coastal Resources Management, April 2, 2015) (Assessment).

[2] *Marine Biological Resources Assessment Surfside-Sunset Beach Beach Nourishment Project* (Coastal Resources Management, July 13, 2014) considered the placement of materials dredged from the County of Orange Sunset and Huntington Harbours Dredging Project, and not specifically the proposed SAR dredge project. However, the assessment represents the most recent survey done for this potential deposition site and, due to the similar nature of the two projects, it is expected that impacts would be similar.

The Assessment surveyed the sandy beach intertidal area and subtidal benthic area of potential deposition. Results of the survey indicated that the sandy intertidal environment exhibited very low numbers of individuals and species numbers at all sampling levels and that the backshore area lacked any organisms or dune vegetation. Sandcrabs were found in the swash zone. In the subtidal areas abundance and species numbers were low, no sensitive species were observed, and the species composition was typical of the nearshore Seal Beach marine environment. No eelgrass or invasive algae (Caulerpa taxifolia) were observed. The Assessment concludes:

> *"Any beach nourishment activity that occurs on the backshore of East Beach will not adversely affect shoreline animals or dune vegetation. Beach nourishment in the high-to-low tide zone will likely result in a temporary reduction of infaunal abundance and species richness. However, the impact would be a short-term, insignificant impact based upon the low abundances and low species richness observed at the site in March 2015, and the natural ability of marine invertebrates to recolonize the benthic environment following cessation of beach nourishment activity."*

No long term or permanent impacts are anticipated to the dry sand beach habitat from beach deposition.

Huntington & Newport Harbors
Eelgrass has been documented within both Huntington and Newport Harbors. Placement of dredge materials, even though proposed on the dry sand beach within Huntington Harbour, could slough into the harbor waters. Therefore, if any of the receptor sites located in Huntington Harbour are utilized, an eelgrass survey of the area waterward of the deposition site must be conducted. If any of the receptor sites located in Newport Harbor (as states previously, deposition in Grand Canal is prohibited) are utilized, an eelgrass survey must be conducted. If any eelgrass is present, then the requirements of the NMFS *Southern California Eelgrass Mitigation Plan* must be implemented. Special Condition 12 imposes this requirement. Only as conditioned, can the proposed beach replenishment project be found to be consistent with Section 30233(d) of the Coastal Act which requires that adverse environmental effects of beach replenishment be minimized.

It should be noted that the Commission approved Coastal Development Permit 5-14-0200 (City of Newport Beach) allowing dredging under and around the approximately 1,200 small docks and placement of this dredged material on the beach areas in front of bulkheads and street end beaches within Newport Harbor (or ocean disposal if the dredged material is unsuitable for placement on these beaches). The five year program approved under CDP 5-14-0200 allows a maximum annual limit of 75,000 cubic yards of dredging and disposal, and an 8,000 cubic yard cap on the size of each individual dredging and disposal event. CDP 5-14-0200 only addresses deposition of material dredged from within Newport Harbor. The proposed project would place material dredged outside Newport Harbor (Santa Ana River). CDP 5-14-0200 limits deposition to 8,000 cubic yards per event. The proposed project may deposit up to 30,000 cubic yards around Balboa Island, which exceeds the single event limit of CDP 5-14-0200. In addition, China Cove is not included within the area subject to CDP 5-14-0200. For these reasons CDP 5-14-0200 is not applicable to the proposed dredge and deposition project.

Grunion
California grunion spawn on sandy beaches in southern California between March and September and have the potential to be affected by beach fill projects. In order to avoid any possible adverse impacts

to grunion, biological monitoring must be conducted at ocean beach deposition site(s) during predicted grunion spawning periods throughout the spawning season immediately prior to deposition to identify the potential for eggs to be present and to determine whether any grunion spawning activities are expected in the timing leading up to the proposed deposition. If any grunion eggs and/or grunion spawning activity are detected, deposition shall not occur or, if begun shall be halted or redirected away from any area that may impact grunion. If grunion spawning activity is confirmed, beach deposition shall be limited to areas above mean high tide where it will not interfere with the grunion spawning activity. This determination shall be made and documented by a qualified biologist with appropriate qualifications acceptable to the Executive Director.

In order to avoid adverse impacts to the *California grunion*, the Commission imposes **Special Condition 1**, which requires the applicant to avoid deposition on ocean beaches during grunion run season unless they obtain clearance from the California Department of Fish and Wildlife and the Executive Director of the Commission to proceed based upon an assessment of the spawning of the California grunion found in the area and a statement that the development activity on the specific dates proposed and in the specified locations will not interfere with the spawning of the California grunion.

Western Snowy Plover

The Western Snowy Plover is a federally listed threatened species and State species of special concern. The western snowy plover is common on the beach in the general project vicinity, especially in the winter. Huntington State Beach is designated critical habitat for the western snowy plover. Huntington State Beach is located immediately upcoast of the Santa Ana River mouth. No deposition is proposed on Huntington State Beach. The Western snowy plover forages in the surrounding coastal saltmarshes. In addition, the Assessment recognizes that the western snowy plover may also be present at Surfside/Sunset, but is not likely to breed there. In order to assure protection of this sensitive species, a qualified environmental resources specialist must examine the ocean fronting beach areas prior to any deposition activities to assess the presence of western snowy plovers. If the birds are present, any planned beach deposition activity will be temporarily halted until the monitor determines that the birds have moved away from the deposition area.

Deposition - Conclusion

The project has been designed and conditioned and potential deposition sites identified that will avoid or minimize impacts to sensitive habitat to the maximum extent feasible consistent with Sections 30233(b) and (d) of the Coastal Act which requires that adverse environmental effects of beach replenishment be minimized.

C. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30210 states:

> *In carrying out the requirement 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.*

Coastal Act Section 30212 states, in pertinent part:

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(l) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

Coastal Act Section 30213 states, in pertinent part:

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred....

Coastal Act Section 30214(a) states:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.
(2) The capacity of the site to sustain use and at what level of intensity.
(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.
(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

Coastal Act Section 30220 states:

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

Recreation - Surfing

The majority of deposition will occur in the nearshore littoral zone at West Newport Beach (Exhibit 4). This nearshore zone receiver site is bounded by depths between –10 and –30 mean Lower Low Water (MLLW). Generally, Newport Beach beaches are considered relatively high quality surfing locations and surfing occurs within the proposed nearshore, ocean deposition area. Deposition is also proposed to potentially occur at East Beach in Seal Beach and at Surfside/Sunset Beach, in Seal Beach and Huntington Beach respectively. Surfing also occurs at these ocean beach deposition sites. Surfing is a water-oriented recreational activity protected under Section 30220 of the Coastal Act. It is also a relatively lower cost recreational activity protected under Section 30221 of the Coastal Act. Surfing could potentially be impacted not only by restriction of access to the water area during deposition activities, but through the modification of existing sand bars and reefs due to the sand deposition, and by poor water quality caused by contaminants being released into the surfzone by the fill material. Potential changes to the surf break in the project vicinity would be due to potential changes in bathymetry as a result of the proposed deposition.

Physical use of the water area by surfers would be affected only in the area of the scow, if the scow option is pursued. If the deposition is accomplished entirely by pipeline or trucking, no impacts to physical use of the water area would be expected. Even under the scenario involving use of a scow for deposition, the scow size is minimal and thus impacts would also be minimal. In addition, the duration of the project is defined, and is expected to last no more than approximately one year from commencement of construction. With regard to adverse recreational impacts due to contaminants from deposition materials, as described previously, the materials have been tested for chemicals and contaminants and were found suitable for deposition[3] in the nearshore zone and on the sandy beach. Therefore, no health threats to surfers from contamination are expected.

However, the actual impacts to surfing due to possible bathymetric changes that may result from the proposed deposition are not known. With regard to the potential modification of sand bars due to beach nourishment, changes in the formation of offshore sand bars are a naturally occurring event, and there are natural seasonal periodic changes to surfing localities. The project may create changing bottom conditions at the sites. This impact could be adverse and significant if sand deposition caused waves to close-out over a long period of time (months) rather than peak, or resulted in a perpetual shorebreak at the beach rather than a nearshore bar for waves to break over. However, any such occurrence is most likely to be a short-term condition while the sand is naturally redistributed over the bottom. The proposed deposition is roughly similar to the natural deposition process that would occur from sediment exiting a river at the river mouth and traveling downcoast in the littoral cell. It is also possible that the project may cause potentially beneficial impacts to surfing by contributing sand to the nearshore that will be deposited in bars throughout the deposition vicinity and generally within the littoral cell. More sand in the system provides material for enhanced sand bar formation and may result in larger or longer-lasting bars, and improved surfing conditions.

In any case, more information on the effects of beach replenishment projects on surf conditions is needed to better understand the effects of beach deposition. If surf conditions were to be monitored visually prior to and following deposition to determine if project impacts occurred, that information would be useful for future deposition projects. The information can best be obtained in conjunction with actual deposition events to provide real time event results. In addition, as described below, formal monitoring of the beach profile within one month after deposition and then annually thereafter, would also provide valuable information on the effects of beach deposition on surf breaks. Pre-deposition beach profile information has already been prepared, providing a baseline with which future profile monitoring may be compared. Special Condition 9 requires the applicant to visually monitor surf conditions at the ocean beach deposition sites three times a week for at least one month in the time prior to commencement of deposition, and then three times a week for at least two months immediately following deposition. In addition, Special Condition 10 requires regular monitoring of the beach profile after deposition has taken place. Both conditions require written assessments of the monitoring observations. Information generated by these monitoring special conditions will provide a useful tool to assist in identifying emerging issues associated with beach nourishment projects.

Beach Profiles

Current beach profiles for each of the potential receptor sites have been documented by the applicant, including multiple transects at each potential deposition site. Methods of sand deposition may affect the length of time the sand is retained on the beach, potentially affecting the width of the sandy beach area and thus public access and recreation. Methods of sand deposition also have the potential to effect

[3] Lower Santa Ana River Maintenance Dredging Project Final Sampling and Analysis Results Report (Mofffat & Nichol, September 2015).

surf break conditions on ocean beaches. Post deposition beach profiles would provide useful comparisons of pre- and post- deposition profiles, and the related conditions of beach width and surf break, among potential other conditions. Records of these comparisons will provide useful information on how existing and proposed beach profiles have changed as a result of the proposed deposition. These records can then be used to inform the design of future deposition projects in determining where best to place sand so that it is retained longest, provides maximum access and recreation opportunities, while also minimizing adverse impacts to shoreline surf breaks. Monitoring the effected beach profiles will establish a means to track various beach replenishment projects over time, providing useful information to identify potential impacts from beach nourishment projects so as to better plan future depositions. The general objective of the beach profile monitoring is to document changes in the condition of the shore zone, thereby providing a basis for evaluating the impacts of natural events and human intervention. Information generated by these monitoring reports can provide a useful tool to assist in identifying emerging issues associated with beach nourishment projects.

Therefore, the Commission imposes Special Condition **10,** which requires the applicant to monitor beach profiles by submitting post- deposition beach profiles of the approved beach deposition locations where deposition occurs. The post- deposition profiles shall be taken along the same transects used for the pre-deposition profiles, and shall be taken one month after deposition at the specific receptor site is complete, and annually thereafter until the area either returns to its pre-disposition condition or is further modified by additional nourishment. Reports documenting the required beach profile monitoring shall be prepared by a qualified professional and submitted to the Executive Director following the one-month after disposal profile(s) and after each annual survey. These reports shall provide information on site conditions and analysis of the long-term changes to the deposition site(s) beach profile(s).

Only as conditioned to monitor the surf break and beach profile at the deposition locations, can the proposed development be found to be consistent with Coastal Act Sections cited above regarding public access and recreation. It should be clarified that deposition may not occur at all potential deposition sites proposed. The beach profile and visual surf break monitoring are intended to apply only to those deposition sites where deposition occurs.

Public Trails

The Santa Ana River Trail and Bikeway is located atop the west levee of the Santa Ana River. The Costa Mesa Bicycle Trail is located atop the east levee of the Santa Ana River up to the confluence with the Greenville-Banning flood control channel, where it transitions to the Banning Channel Bikeway. The Santa Ana River Trail and Bikeway connects directly to the Huntington Beach Bike Trail, along the beach. The Costa Mesa Bicycle Trail connects to Pacific Coast Highway at the Pacific Coast Highway bridge over the Santa Ana River. The proposed river dredging could result in impacts to public use of these trails. It is possible that with a bicycle trail atop both levees, the proposed dredging could be accommodated while at least one of the levee top public trails remains open. However, it may be necessary to redirect bicycle or foot traffic away from these trails at least temporarily. It may be necessary to redirect bicycle or foot traffic onto other roadways or bike paths for some portion of project duration. However, it is important that any impacts to the public trails atop the levees be the least necessary to accomplish the proposed river dredging project. In order to assure that any temporary detours or closure of these public trails maintains public access, a public access plan for the proposed project must be prepared by the applicant. The Public Access Plan shall clarify whether any temporary closure of either trail is necessary, and if so, shall explanation why the closure is necessary with supporting documentation (such as access requirements of construction equipment to

the river, public safety, etc.). In addition, the Public Access Plan shall detail any detour plan that may be implemented over the duration of project, shall demonstrate that any closure shall be the least necessary to accomplish the project objective, shall describe details of any signage to be used to redirect public trails users, including, but not limited to, detour signage (including, but not limited to, sign dimensions, sign wording, sign lettering sizes, and location of the signs), and the expected timeframe of any trail closure and/or detour, and plans to restore the trail to public use as soon as feasible.

Impacts to public use of the levee top trails would be limited to the duration of the proposed river dredging, which is expected to be complete within approximately one year. Thus, public access impacts to these trails will be temporary. Nevertheless, it is important to assure that public access is maximized even during dredge operations to the extent feasible. Special Condition 8 requires the applicant to prepare and implement, subject to review and approval of the Executive Director, a Public Access Plan to address public use of the public levee top trails during construction. Only as conditioned is the proposed project consistent with the public access policies, including Section 30210, of the Coastal Act.

Recreation - General

The above policies establish the shoreline as a valuable asset to the environment and economy of the Southern California region and the State, worthy of protection and enhancement. The shoreline is also considered a resource of national significance. Beach erosion has been an increasing problem in the Southern California region, and in many past projects the Commission has identified beach replenishment as a means to preserve and enhance the environmental quality, recreational capacity, and property protection for the region's shoreline. Additional sand on beaches increases the amount of recreational area available for public use, decreases the rate of beach erosion, and provides a buffer (a wider beach) between waves and adjacent existing development, thereby reducing pressure to construct shoreline protective devices which can adversely affect both the visual quality of scenic coastal areas and shoreline sand supply.

Currently, the natural sediment deposition rate along southern California beaches is much lower than historic rates. This decrease in natural sedimentation is due to a variety of reasons, including development of dams and other human alterations of rivers. Sediment that would have been deposited into the littoral zone becomes trapped and never reaches the coast. In addition, Southern California has a long history of beach management to provide recreational opportunities and to provide protection of existing development. Local beach profiles reflect these decreased sediment deposition conditions, showing signs of erosion. Beach replenishment programs have been implemented to offset this deposition shortfall at various beaches throughout southern California, including in San Clement (5-15-2056), Carlsbad (6-14-1128), and Encinitas (6-08-110-A2), in an attempt to allow and expedite beach replenishment. It is impossible to say how long any particular deposition project would remain intact on a beach, given the possible variations in conditions at the time of deposition. However, during the time the sand remains on the beach, the public will have the benefit of wider sandy beaches and protection of existing development increases. In addition, any sand deposited on the beach will become part of the littoral cell system.

Nevertheless, the project may potentially have some temporary adverse impacts on public access and recreation. The proposed project's potential deposition sites are used for various recreational activities including fishing, swimming, surfing, kayaking, strolling and/or sunbathing. Typically, the Commission has prohibited construction on beaches or in recreational areas from occurring during the

summer months, or, if summer construction is unavoidable, prohibited construction on weekends and holidays. However, an adequate sand supply is essential to satisfying the access and recreation policies listed above. Consequently, in order to allow for the greatest flexibility in getting available sand to the various receptor beaches such that public access and recreation can be improved consistent with the policies listed above, the proposed project does not restrict deposition timing during the summer.

The majority of the deposition will occur in the nearshore area of West Newport, either by pipeline directly to the deposition site or by piping the materials to a scow which will then be transported to the deposition site. Thus, impacts to public use are not anticipated, as the work will occur primarily offshore.

Additional deposition may also occur at any of the other proposed receptor sites, including East Beach and Surfside in Seal Beach, Sunset Beach and the five Huntington Harbour pocket beaches in Huntington Beach, or at Balboa Island and China Cove in Newport Harbor. All these locations provide opportunities for water oriented recreational activities, and most include sandy beach area. Deposition at the Balboa Island locations is intended to support existing bulkheads that support existing development, including the public walkway that rings the perimeter of the island. Although the project applicant anticipates most, if not all, of the deposition to occur at the West Newport site, the additional deposition sites are also included as part of the proposed project as potential deposition sites. Methods proposed to transport suitable material to the other potential receptor sides would be accomplished either by hydraulically pumping the material from the Lower Santa Ana River to a dump scow located near the mouth of the river, then the scow would then be moved to a location offshore of the receptor site, and then pumped from the scow to the onshore zone of the particular receptor site beach. Sand containment dikes may be constructed on the beach to receive and dewater the depositional material. The other transport option to these potential receptor sites would be via truck. The trucks would haul suitable, screened material taken from upstream areas of the river to the receptor beach(es). Then, bulldozers would spread the material along the beach per the fill design. The total timeframe for the proposed project, including all dredging and deposition, is expected to be one year. Potential impacts to public access and recreation would be minimal and outweighed by the public access and recreation benefits of beach nourishment.

D. MARINE RESOURCES

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 economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the 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 waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

The proposed project involves dredging within the Santa Ana River and deposition of dredged materials in coastal waters and, potentially, in the intertidal zone and/or on sandy beach area. All of these activities have the potential to adversely impact marine resources and water quality. The project as proposed does include water quality Best Management Practices (BMPs) intended to avoid such impacts. BMPs proposed as part of the project include: prohibiting equipment repair or maintenance activities within 24 hours of predicted rainfall or within any channel crossing, on the banks, or near any drainage areas leading to the river; adequately maintaining equipment to prevent leaking of fuel or oil into the river; locating all construction staging areas outside of the river and requiring that all vehicle maintenance areas include an impervious barrier to protect soil form contamination; prohibiting all toxic and hazardous materials associated with equipment maintenance activities within the channel, and should any such material be released the vicinity of the channel, requiring that such spills be promptly and completely cleaned up; requiring that all storage areas for oil, solvents, coolants, wastes, and other miscellaneous fluids be covered and protected with secondary containment structures, and that disposal containers for such fluids be provided within designated staging areas and that disposal be conducted in accordance with California Code Title 22 regulation.

However, additional construction BMPs could be incorporated into the proposed project to promote the biological productivity of coastal waters, to assure that protection of marine, and to assure that water quality is maximized, as required by Section 30230 and 30231 of the Coastal Act. These additional measures include but are not limited to the use of silt curtains and floating booms when appropriate, the prohibition of any construction machinery or materials not essential for project improvements in subtidal or intertidal zones; the installation of barriers between work areas and water areas; and implementation of erosion control BMPs. All of the additional BMPs are listed in Special Condition 13.

The proposed development has a potential for a discharge of polluted runoff from the project site into coastal waters. The development, as proposed and as conditioned, incorporates BMPs to minimize the effect of construction activities on the marine environment. Therefore, the Commission finds that the proposed development, as conditioned, conforms with Sections 30230 and 30231 of the Coastal Act regarding the biological productivity of coastal waters, assuring the protection of marine resources, and protection of water quality.

E. LOCAL COASTAL PROGRAM (LCP)

The Commission recognizes the Santa Ana River as an LCP segment of the County of Orange, but there is no certified LCP for this LCP segment of the County of Orange and none is expected in the foreseeable future as most of this area is located within the Commission's retained jurisdiction as it is a tidally influenced area. The standard of review is the Chapter 3 policies of the Coastal Act.

Coastal Act section 30604(a) states that, prior to certification of a local coastal program ("LCP"), a coastal development permit can only be issued upon a finding that the proposed development is in conformity with Chapter 3 of the Act and that the permitted development will not prejudice the ability of the local government to prepare an LCP that is in conformity with Chapter 3. The County of Orange has neither a certified LCP nor a certified Land Use Plan for the Santa Ana River segment of unincorporated Orange County. As conditioned, the proposed development will be consistent with the

Chapter 3 policies of the Coastal Act. Approval of the project, as conditioned, will not prejudice the ability of the local government to prepare a Local Coastal Program for the Santa Ana River area that is in conformity with the provisions of Chapter 3 of the Coastal Act.

F. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096(a) of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, 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 Orange County Public Works Department is the lead agency responsible for certifying that the proposed project is in conformance with the California Environmentally Quality Act (CEQA). The County certified Addendum IP 15-359 to the Supplemental Environmental Impact Statement/Environmental Impact Report 583 for the Phase II General Design Memorandum of the Santa Ana River Mainstem Project Lower Santa Ana River in April 2016. Previous documents prepared in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) include: 1988 Phase II General Design Memorandum (GDM) and Supplemental Environmental Impact Statement (SEIS)/Environmental Impact Report (EIR) 583 on the Santa Ana River Mainstem Project, adopted by Orange County; 1991 Supplemental Environmental Assessment (SEA) for Enlargement of Reaches 1 and 10 Staging Areas; 2001 SEA for Santa Ana River Mainstem Project (SARP) Reach 1 Channel Excavation to Design Grade (2001 SEA); 2003 Final SEA for the Santa Ana River Mainstem Project (SARP) for Staging Areas for Channel Excavation to Design Grade in Reaches 1 and 2 (2003 SEA); 2004 SEA and Addendum to the 1988 SEIS/SEIR for SARP Reach 2 Channel Excavation to Design Grade (2004 SEA Addendum).

As conditioned, there are no feasible alternatives or additional feasible mitigation measures available that would substantially lessen any significant adverse effect that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, is the least environmentally damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

SUBSTANTIVE FILE DOCUMENTS

1. Final Sampling and Analysis Plan Results Report (SAP) (Moffatt & Nichol, September 2015)
2. Lower Santa Ana River Sand Management Project Eelgrass Comprehensive Management Plan, Merkel & Associates, March 2016
3. California Dept. of Fish & Game (now Fish & Wildlife) Streambed Alteration Agreement No. 1600-2007-0199-R5
4. Final Supplemental Environmental Assessment and Addendum to the 1988 Phase II General Design Memorandum SEIS/EIR Santa Ana River Mainstem Project (SARP), Lower Santa Ana River, SCH#2003044003, July 2003
5. Results of Surveys of Nearshore Marine Habitats Offshore the Santa Ana River, Chambers Group, April 2015
6. Results of Surveys of Nearshore Marine Habitats Offshore the Santa Ana River (Chambers Group, January 2016)

7. Final Environmental Assessment for Surfside-Sunset Beach Nourishment Project, Stage 12, Orange County California, USACE, July 2008
8. Results of Surveys of Nearshore Marine Habitats Offshore the Santa Ana River, (Chambers Group, July 2015)
9. Final Environmental Assessment for Surfside-Sunset Beach Nourishment Project, USACE, July 2008
10. Update of the Intertidal and Subtidal Habitat Bio-assessment Information for the City of Seal Beach East Beach Nourishment Project (Coastal Resources Management, April 2, 2015)
11. Marine Biological Resources Assessment Surfside-Sunset Beach Beach Nourishment Project (Coastal Resources Management, July 13, 2014)
12. Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual for the Lower Santa Ana River Channel (USACE, December 1996)
13. Federal Consistency Certification-29-88 (U.S. Army Corps of Engineers
14. Results of the Fourth Newport Bay Eelgrass Mapping Survey, Status and Distribution Between 2012 and 2014, Newport Beach, California (Coastal Resources Management, November 25, 2014)
15. 2015 Southern California Bight Regional Eelgrass Surveys (Merkel & Associates, December 2015)
16. Vegetation Survey of the Lower Santa Ana River for the Lower Santa Ana River Maintenance Dredging Project, Orange County, California (Chambers Group, January 2016)
17. Update of Intertidal and Subtidal Habitat Bio-assessment Information for the City of Seal Beach East Beach Nourishment Project (Coastal Resources Management, April 2, 2015)
18. Marine Biological Resources Assessment Surfside-Sunset Beach Beach Nourishment Project for the County of Orange Sunset/Huntington Harbour Dredge Project (Coastal Resources Management, July 13, 2014)
19. Results of the Biological Survey for the Proposed Five Sand Receiver Sites Located Within Huntington Harbour, in the City of Huntington Beach, California (Chambers Group, January 28, 2016)

Vicinity Map

Santa Ana River Dredge Site

5-15-0234 OCPW

Exhibit 1a

FIGURE 1

Vicinity Map

Santa Ana River Dredge Site Area Within Coastal Zone

5-15-0234 OCPW

Exhibit 1b

Lower Santa Ana River Regional Locator Map
Lower Santa Ana River Flood Control Maintenance Program
Eelgrass Comprehensive Management Plan

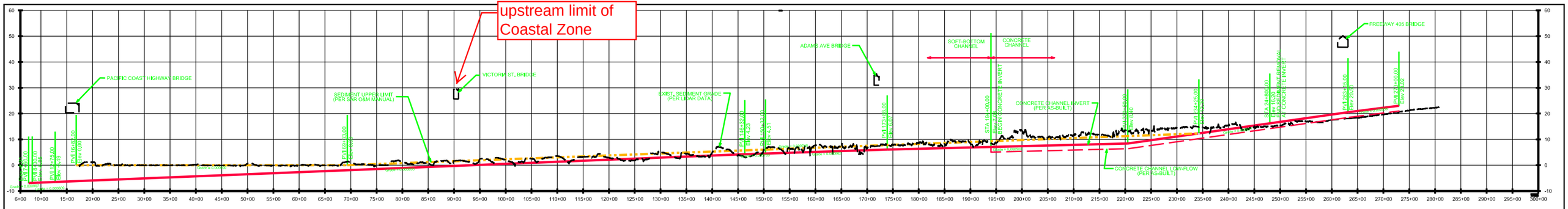
Figure 1

Merkel & Associates, Inc.

Santa Ana River Watershed Map

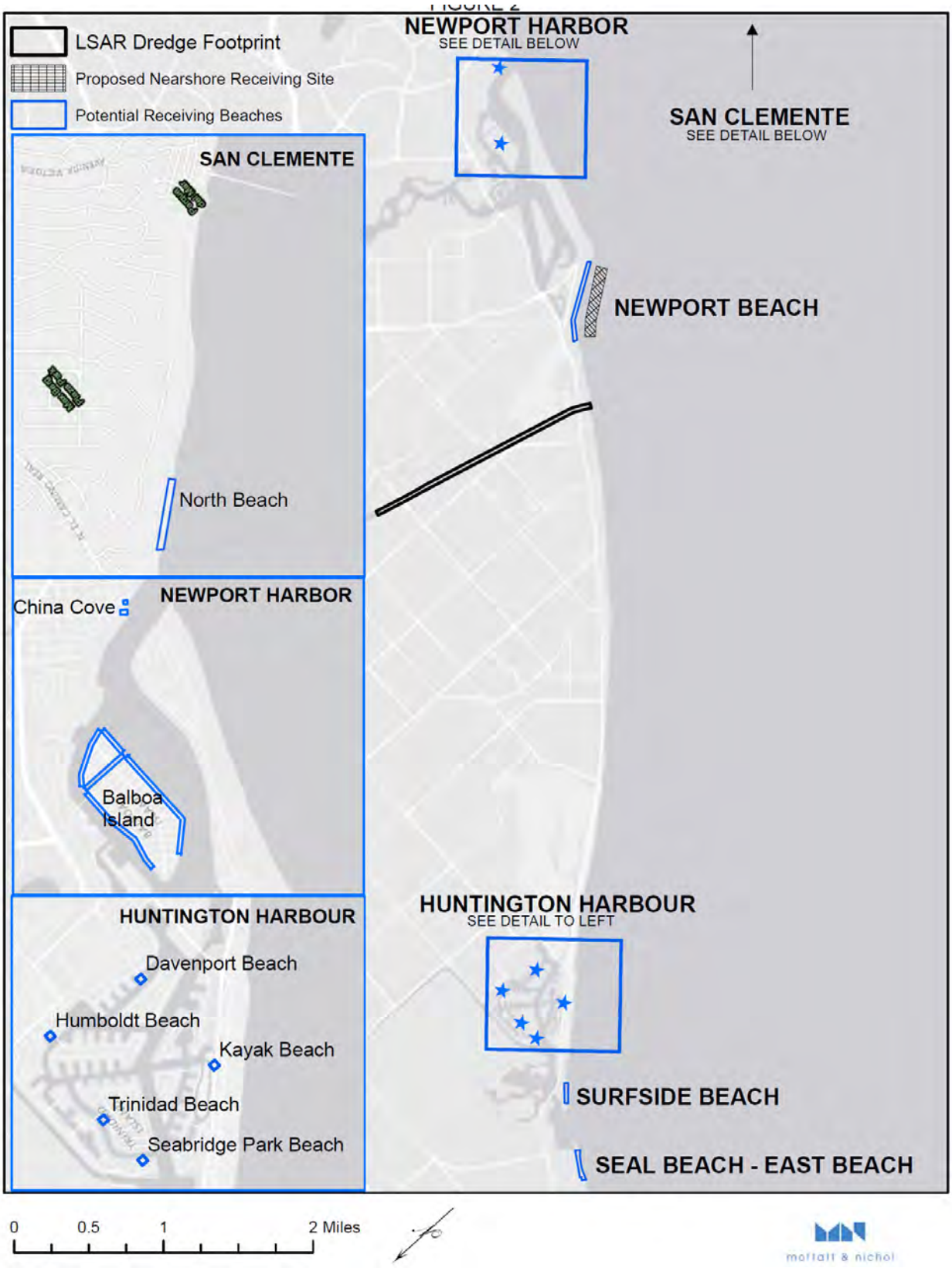
5-15-0234 OCPW

Exhibit 2



SANTA ANA RIVER SEDIMENT REMOVAL PROFILE

50x VERTICAL EXAGGERATION



Dredge Materials Receptor Sites

(San Clemente is Not Proposed as a Site)

5-15-0234 OCPW

Exhibit 4

SAR1 (Upstream Reach)
Inspected 2014

SAR1 (Downstream Reach)
Inspected 2013

Buena Park
Fullerton
Anaheim
Los Alamitos
Garden Grove
Villa Park
Orange
Santa Ana
Tustin
Irvine
Costa Mesa
Huntington Beach
Long Beach

Santa Ana River
Santiago Creek

Pacific Ocean
San Pedro Bay
Long Beach Outer Harbor
Long Beach Middle Harbor

N

0 2 4 8 Miles

Legend

- SAR1 Levee System
- Leveed Area (PI No. 1)

Aerial Source and Date: ESRI 2014

SAR1 LEVEE SYSTEM (UPSTREAM REACH)
PERIODIC INSPECTION REPORT NO.1

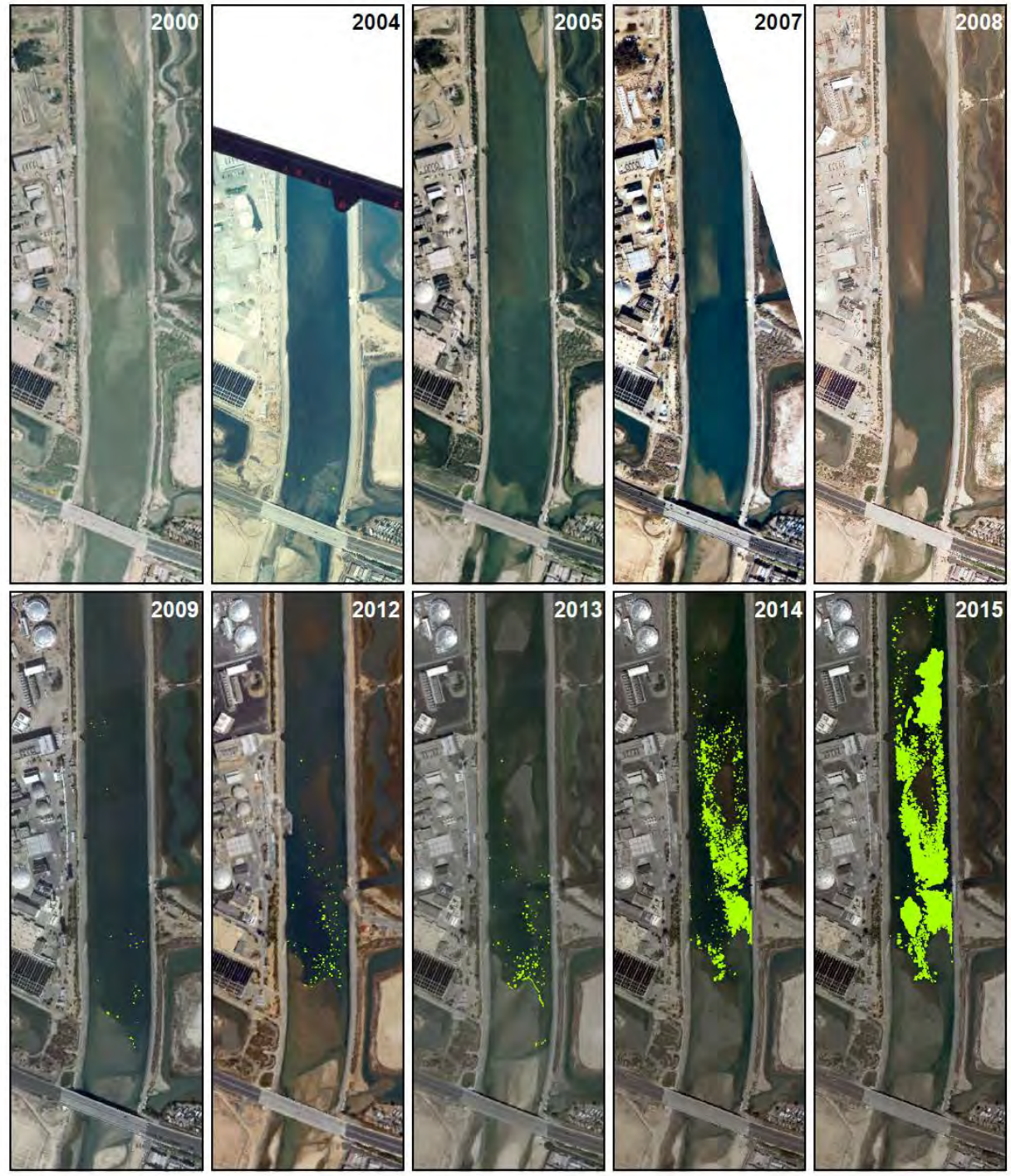
LOCATION AND LEVEED AREA MAP

US Army Corps of Engineers ®
Los Angeles District

TETRA TECH

FIGURE 1.1

Figure 1.1: Location and Leveed Area Map



Eelgrass Distribution 2000-2015 for Mappable Years
Lower Santa Ana River Flood Control Maintenance Program
Eelgrass Comprehensive Management Plan

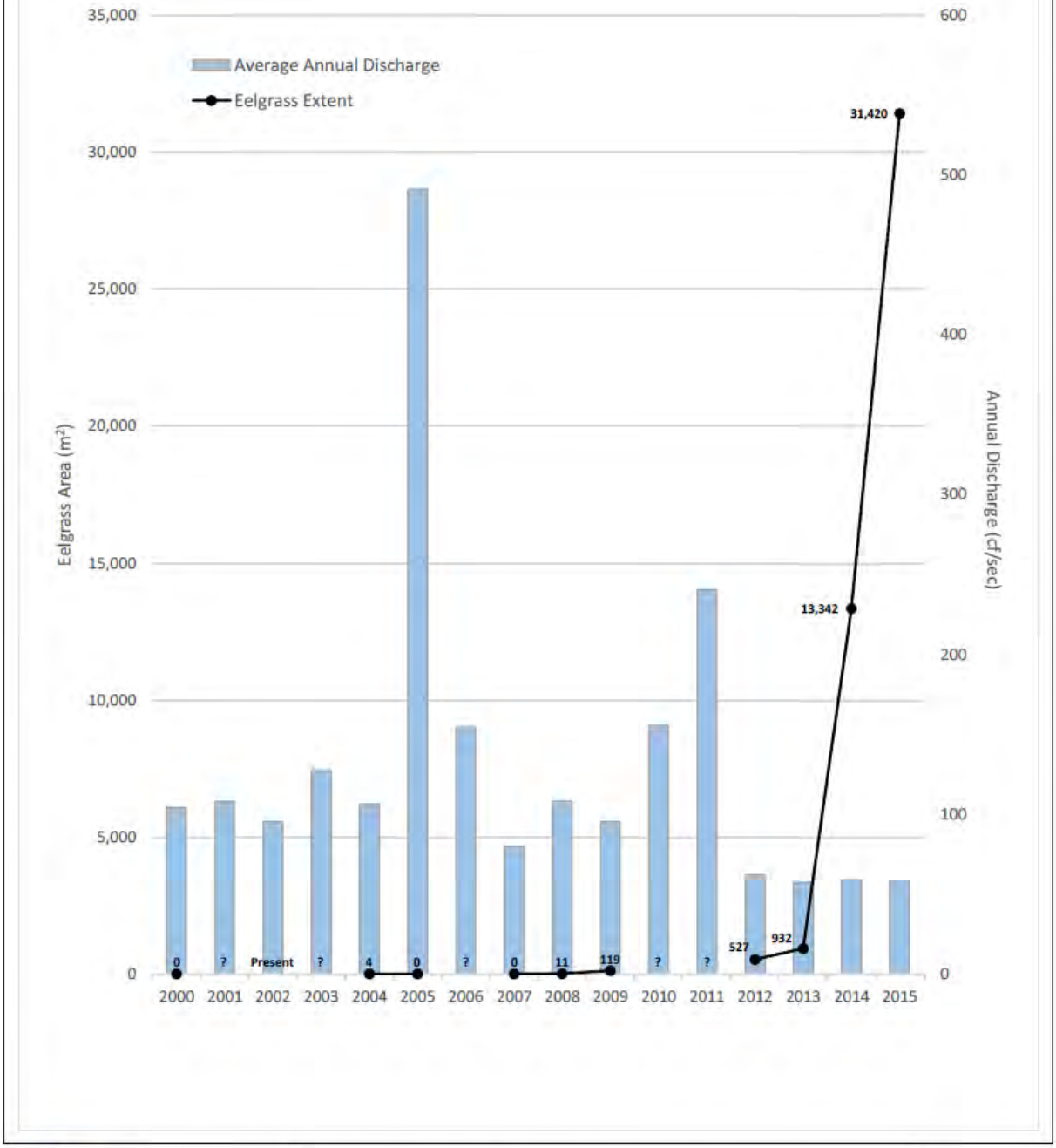
Figure 3

Merkel & Associates, Inc.

Santa Ana River Eelgrass Distribution

5-15-0234 OCPW

Exhibit 6



Eelgrass Distribution and River Discharge 2000-2015
Lower Santa Ana River Flood Control Maintenance Program
Eelgrass Comprehensive Management Plan

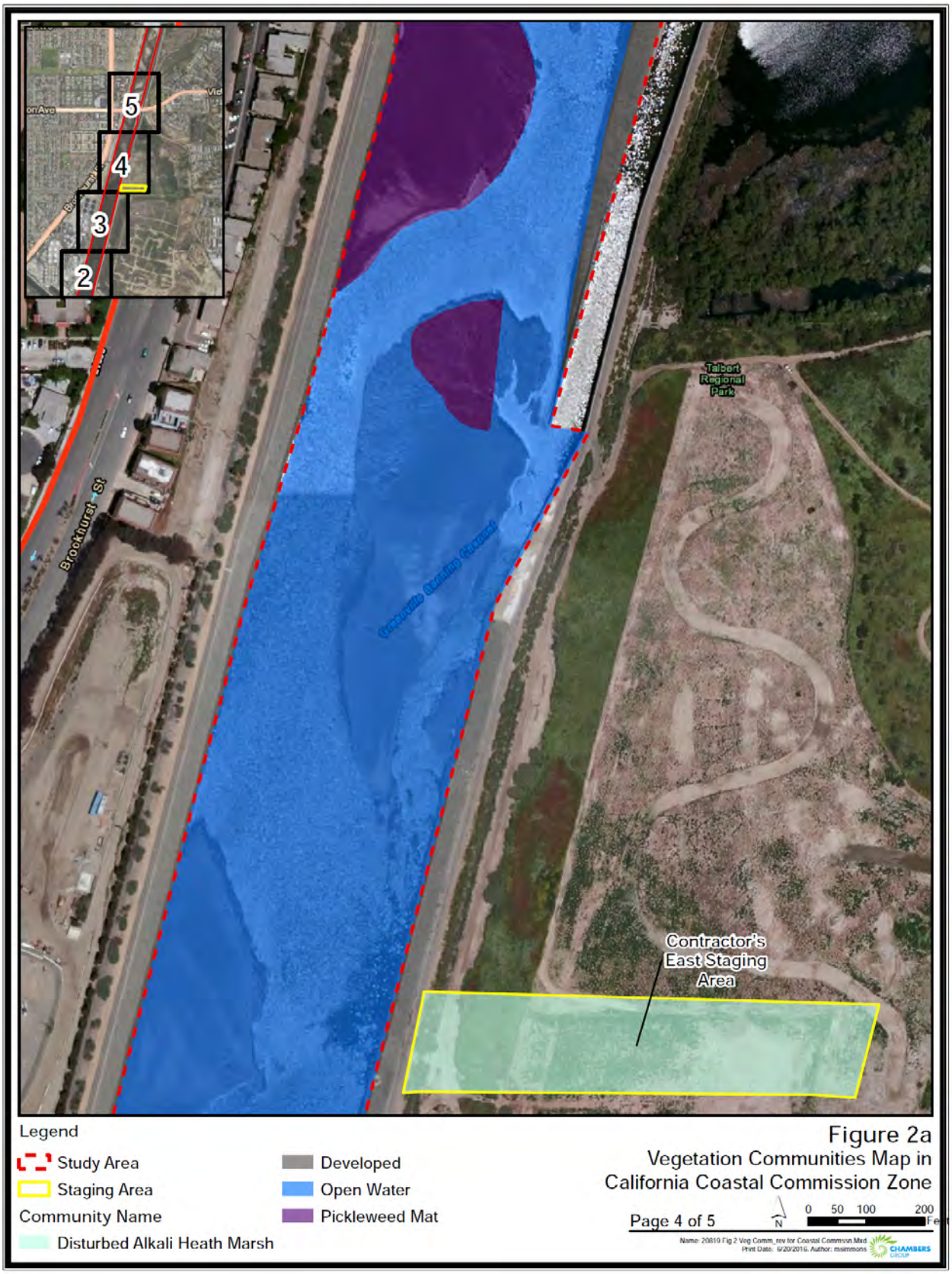
Figure 4

Merkel & Associates, Inc.

Eelgrass Distribution Chart

5-15-0234 OCPW

Exhibit 7



East Staging Area Vegetation Survey

5-15-0234 OCPW

Exhibit 8