



# PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS  
LOS ANGELES DISTRICT

BUILDING STRONG®

## APPLICATION FOR PERMIT – REVISED LOCATION AND PROJECT DESCRIPTION Avalon Ocean Farm

**Public Notice/Application No.:** SPL-2020-00039-TS

**Project:** Avalon Ocean Farm

**Comment Period:** August 23 through September 7, 2021

**Project Manager:** Theresa Stevens; (805) 585-2146; [theresa.stevens@usace.army.mil](mailto:theresa.stevens@usace.army.mil)

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### **Applicant**

Thomas Grimm  
Avalon Aquafarms, Inc.  
2445 Garfield Street  
Carlsbad, California 92008

### **Contact**

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2445 Garfield Street  
Carlsbad, California 92008

### **Location**

Pacific Ocean offshore from the city of Long Beach, Los Angeles County, CA (specific coordinates are provided in the exhibits).

### **Activity**

To install a 1,860-acre shellfish and macroalgae aquaculture facility in federal waters offshore from Long Beach and/or Huntington Beach, California (see enclosed drawings, project description, and plot coordinates). For more information see Additional Project Information below.

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### **Submittal of Public Comments**

Interested parties are hereby notified a substantive revision to an existing Department of the Army (DA) permit application has been received for the activity described herein and shown on the attached drawing(s). We invite you to review today's public notice and provide views on the proposed work. By providing substantive, site-specific comments to the Corps Regulatory Division, you provide information that supports the Corps' decision-making process. All comments received during the comment period become part of the record and will be considered in the decision. This permit will be issued, issued with special conditions, or denied under Section 10 of the Rivers and Harbors Act.

**During the Coronavirus Health Emergency, Regulatory Program staff are teleworking. Please do not mail printed documents, including comments, to any Regulatory staff. Instead, your comments should be submitted electronically to: [theresa.stevens@usace.army.mil](mailto:theresa.stevens@usace.army.mil). Should you have any questions or concerns about the Corps' proposed action or our comment period, you may contact Theresa Stevens directly at (805) 585-2146.**

The mission of the U.S. Army Corps of Engineers Regulatory Program is to protect the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands. The Regulatory Program in the Los Angeles District is executed to protect aquatic resources by developing and implementing short- and long-term initiatives to improve regulatory products, processes, program transparency, and customer feedback considering current staffing levels and historical funding trends.

Corps permits are necessary for any work, including construction and dredging, in the Nation's navigable water and their tributary waters. The Corps balances the reasonably foreseeable benefits and detriments of proposed projects and makes permit decisions that recognize the essential values of the Nation's aquatic ecosystems to the general public, as well as the property rights of private citizens who want to use their land. The Corps strives to make its permit decisions in a timely manner that minimizes impacts to the regulated public.

During the permit process, the Corps considers the views of other Federal, state and local agencies, interest groups, and the general public. The results of this careful public interest review are fair and equitable decisions that allow reasonable use of private property, infrastructure development, and growth of the economy, while offsetting the authorized impacts to the waters of the United States. The permit review process serves to first avoid and then minimize adverse effects of projects on aquatic resources to the maximum practicable extent. Any remaining unavoidable adverse impacts to the aquatic environment are offset by compensatory mitigation requirements, which may include restoration, enhancement, establishment, and/or preservation of aquatic ecosystem system functions and services.

### **Evaluation Factors**

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof. Factors that will be considered include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people. In addition, if the proposal would discharge dredged or fill material, the evaluation of the activity will include application of the EPA Guidelines (40 CFR Part 230) as required by Section 404 (b)(1) of the Clean Water Act.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

## **Preliminary Review of Selected Factors**

EIS Determination - A determination has not been made as to a requirement for an environmental impact statement (EIS) for the proposed structures.

Water Quality - The proposed project is located in federal waters seaward of the boundary of the territorial seas as defined in Corps regulations (33 CFR 328 and 329). Section 401 water quality certification is not required for projects in federal waters.

Coastal Zone Management (CZM) - The applicant shall certify the proposed activity would comply with and would be conducted in a manner consistent with the approved State Coastal Zone Management Program or obtain a waiver. For those projects in or affecting the coastal zone, the Federal Coastal Zone Management Act requires that prior to issuing the Corps authorization for the project, the applicant must obtain concurrence from the California Coastal Commission that the project is consistent with the State's Coastal Zone Management Plan.

Essential Fish Habitat (EFH) - The Corps had previously determined the originally proposed action had the potential to adversely affect EFH and federally managed fishery species complexes. EFH consultation was initiated with the National Marine Fisheries Service (NMFS, letter dated November 24, 2020)<sup>1</sup>. To support the consultation process, additional information was submitted to NMFS (letter dated March 12, 2021). The NMFS closed the consultation process as described below in a letter dated April 19, 2021. Since that date, the applicant has substantively changed the proposal (refer to enclosures). Pursuant to Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Corps will reinstate EFH consultation under separate cover.

Endangered Species Act (ESA) - The Corps had previously determined the proposed action may affect but would not likely adversely affect federally listed threatened and endangered species and designated critical habitat and requested concurrence from the NMFS (letter dated November 24, 2020). To support the consultation process, additional information was submitted to NMFS (letter dated March 12, 2021). In response to the additional information, the NMFS did not concur with the Corps determinations on federally listed species or designated critical habitat and recommended the Corps request formal consultation (letter dated April 19, 2021); Given NMFS' recommendation, the Corps has determined the revised proposal may adversely affect federally listed species and designated critical habitat. The Corps will initiate formal consultation with NMFS under separate cover.

Fish and Wildlife Coordination - The Fish and Wildlife Coordination Act requires federal agencies authorizing activities that would modify any body of water to consult with the U.S. Fish and Wildlife Service (USFWS) and NMFS with a view to the conservation of fish and wildlife species by preventing loss of and damage to such resources due to the proposed activities (16 U.S.C 662(a)). The Corps previously initiated coordination with USFWS through the public notice and with NMFS under separate cover for the original proposal. NMFS advised the Corps that the proposed action may result in harassment of marine mammals. Due to substantive changes to the proposed activities, the Corps is reinstating FWCA coordination with USFWS through this public notice and with NMFS under separate cover. If the proposed activities may result in harassment of marine mammals, the applicant is required to obtain an incidental take statement from NMFS under the Marine Mammal Protection Act.

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<sup>1</sup> This EFH consultation request was combined with a consultation request under the Endangered Species Act and coordination under the Fish and Wildlife Coordination Act for potential impacts on marine mammals protected by the Marine Mammal Protection Act.

Cultural Resources - The Corps previously determined the proposed activities have no potential to affect cultural resources. This determination was based on the information in the latest version of the National Register of Historic Places (NRHP), information provided by the applicant, and other sources which indicate no historic properties occur within the vicinity of the proposed activities. Specifically, no known shipwrecks or archaeological sites occur on the seabed in the project location, and no tribal representatives or interested parties on the Native American Heritage Commission (NAHC) distribution list responded to the Corps' coordination letters dated December 21, 2020 (sent via email due USACE COVID-19 policies).

The revised proposed plot locations are on the same USGS quadrangle previously reviewed by the NAHC, tribal representatives, and interested parties. In addition, no known shipwrecks or archaeological sites occur on the seabed in the revised project location. As such, additional coordination is not warranted. This review constitutes the extent of cultural resources investigations by the District Engineer, and he is otherwise unaware of the presence of such resources in the revised project area.

Public Hearing - Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearing shall state with particularity the reasons for holding a public hearing.

### **Proposed Activity for Which a Permit is Required**

The applicant is required to obtain a DA permit to construct a commercial scale shellfish and kelp aquaculture facility consisting of anchors, anchor lines, grow lines, surface buoys, subsurface floats and associated features in approximately 2,113 acres of navigable waters of the U.S.

Basic Project Purpose - The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed project, and is used by the Corps to determine whether the applicant's project is water dependent (i.e., requires access or proximity to or siting within the special aquatic site to fulfill its basic purpose). Establishment of the basic project purpose is necessary only when the proposed activity would discharge dredged or fill material into a special aquatic site (e.g., wetlands, pool and riffle complex, mudflats, coral reefs). Because no discharges of dredged or fill material are proposed within special aquatic sites, identification of the basic project purpose is not necessary. However, for the purpose of disclosure, the basic project purpose is aquaculture.

Overall Project Purpose - The overall project purpose serves as the basis for the Corps' 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project, and which allows a reasonable range of alternatives to be analyzed. For the purpose of disclosure, the overall project purpose for the proposed project is aquaculture.

### **Additional Project Information**

Baseline information - The Corps issued a Public Notice for the applicant's original proposal on March 23, 2020 (SPL-2020-00039; <https://www.spl.usace.army.mil/Media/Public-Notices/Regulatory-Public-Notices/>) and received a numerous public comments. Subsequently, the Corps was made aware of the Huntington Beach contingency anchorage area (contingency anchorage map exhibit enclosed). The contingency anchorage is an overflow temporary anchorage area identified by the U.S. Coast Guard (USCG) and used by container vessels and tankers bound for the restricted pilot boarding zones prior to navigating into the ports of Los Angeles and Long Beach for unloading. The contingency anchorage has been full or nearly full during the past 1-2 years.

The contingency anchorage and the original project sites were mapped by the National Oceanic and Atmospheric Administration National Centers for Coastal Ocean Science (NOAA NCCOS) and overlapped substantially. As a result of this potential conflict with the contingency anchorage, the original project proposal is no longer being evaluated for a DA permit.

In light of potential conflicts between the proposed project and the contingency anchorage the Corps coordinated with the applicant, U.S. Coast Guard Long Beach sector, ports of Los Angeles and Long Beach, port pilots, and the Marine Exchange of Southern California (MXSoCal) Vessel Traffic Service. In response, the applicant submitted a revised project location map with three plots, coordinates for each plot, and a revised project description on June 27, 2021. **This Public Notice is for the revised project proposal.**

The three revised plot locations would be constructed in approximately 90-130-foot-deep water and over sandy soft-bottom habitat which appears to lack naturally occurring reefs, kelp beds, eelgrass, seagrass, or other habitat areas of particular concern (HAPC). There is an existing Corps-authorized 100-acre commercial shellfish farm on the San Pedro shelf immediately adjacent to the revised plot locations<sup>2</sup>.

The revised plot locations do not appear to conflict with the contingency anchorage, areas used by the military (e.g., offshore military uses or training areas), commercial shipping lanes, oil and gas leases, or marine protected areas. However, two of the revised plot locations abut the contingency anchorage fairway zone<sup>3</sup>; fairway zones allow for safe navigation to/from the contingency anchorage. The DOD Clearinghouse found no national security conflicts with the original plot locations; however, the Corps will coordinate the revised plot locations with the DOD Clearinghouse to ensure no national security conflict would occur.

Commercial fishing vessels operate on the San Pedro Shelf, however additional information on commercial fishing in the proposed project area is requested from resource agencies, the public, and interested parties.

**Revised Project Description** - A detailed project description, coordinates, location map, and orientation of each plot for the revised proposal is enclosed. The applicant proposes to construct three commercial scale subsurface aquaculture plots consisting of multiple submerged long-lines on which shellfish and kelp would be grown. Species would be grown on the backbone lines using grow ropes and/or suspended lantern nets. The applicant proposes to obtain shellfish spat and algal spores from the Carlsbad Aquafarm (a CDFW-certified grower and source); if additional sources are needed the applicant proposes to obtain spat and spores only from other CDFW-certified sources. Shellfish and kelp products would be harvested at the project site using a specialized boat and returned to the Port of Los Angeles (Berths 57-60, 2456 Signal Street, San Pedro, CA) for additional processing, packaging, and distribution. Shellfish products would be subject to the requirements of the National Seafood Sanitation Program (NSSP) administered by the U.S. Department of Food and Drug Administration (FDA), and NOAA's Office of International Affairs and Seafood Inspection.

A USCG navigation safety risk assessment was prepared for the original proposal, and the applicant is coordinating review of the revised proposal with the USCG. If the project is approved, and to address navigation safety, the plots would be marked on the surface by U.S. Coast Guard (USCG)

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<sup>2</sup> The existing facility was named Catalina Sea Ranch (CSR), and is now referred to as Pacific Mariculture.

<sup>3</sup> Fairway zones were identified by Ports of Los Angeles and Long Beach, port pilots, the U.S. Coast Guard Long Beach sector, and the Marine Exchange of Southern California (MXSoCal) Vessel Traffic Service.

approved private aids to navigation (PATON). The Corps would also require the applicant to ensure the plots are mapped by NOAA's Office of Coast Survey on its marine charts.

With the original proposal, the applicant submitted a master monitoring plan to address gear marking and recovery, structural maintenance, biological resources (including invasive species), marine mammal entanglement/coordination/response, crew training, and decommissioning. The Corps is coordinating with the applicant to determine if updates to these plans are warranted for the revised proposal.

With the original proposal, the applicant submitted an engineering design study. The Corps is coordinating with the applicant to determine if updates to this study is warranted for the revised proposal. The Corps will coordinate review of the engineering study with NOAA NCCOS.

Proposed Mitigation - No compensatory mitigation has been proposed by the applicant for the revised proposal. Mitigation may be required as a result of comments received in response to this public notice, federal consultations, the applicant's response to those comments, and/or the need for the project to comply with the Corps regulatory program.

Proposed Special Conditions - Special conditions will likely be required as a result of comments received in response to this public notice, the applicant's response to those comments, and/or the need for the project to comply with the Corps regulatory program.

For additional information please contact Theresa Stevens, PhD at (805) 585-2146 or via e-mail at [theresa.stevens@usace.army.mil](mailto:theresa.stevens@usace.army.mil). This public notice is issued by the Chief, Regulatory Division.



*Regulatory Program Goals:*

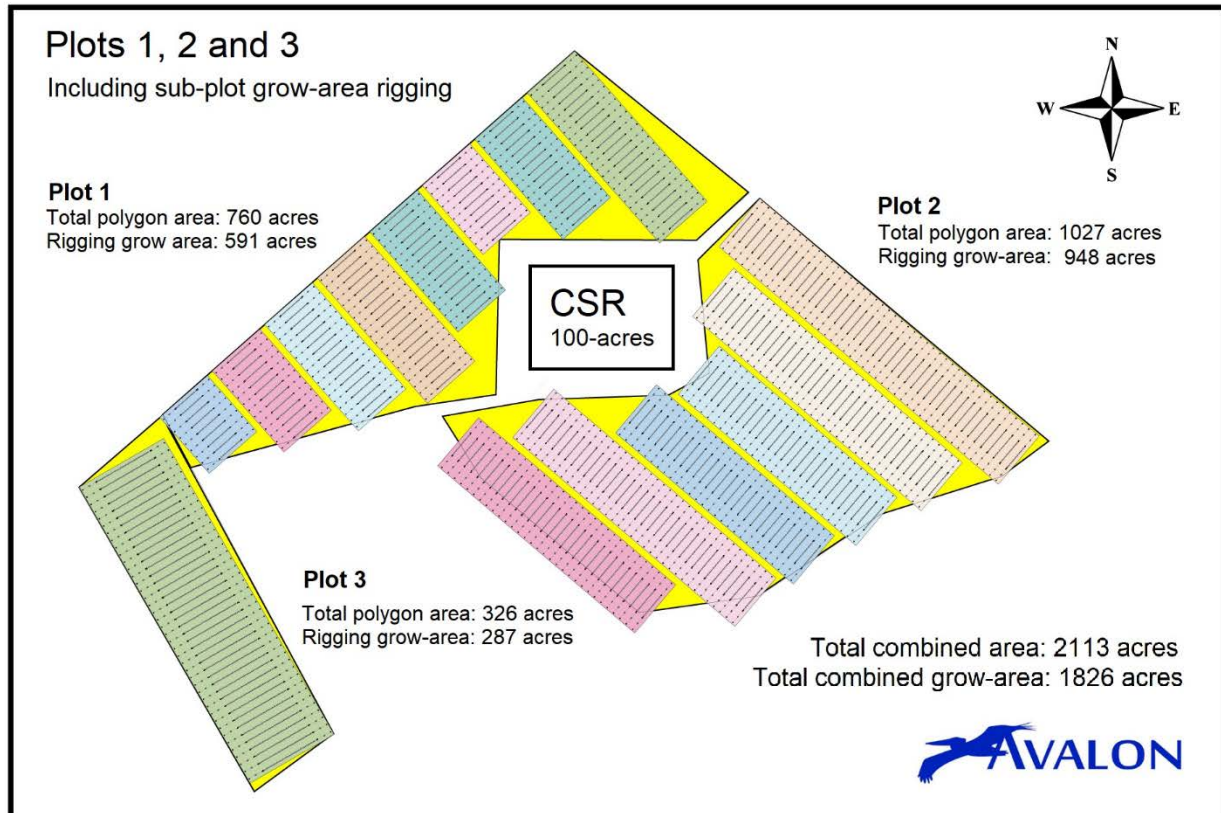
- To provide strong protection of the nation's aquatic environment, including wetlands.
- To ensure the Corps provides the regulated public with fair and reasonable decisions.
- To enhance the efficiency of the Corps' administration of its regulatory program.

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**DEPARTMENT OF THE ARMY**  
**LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS**  
[WWW.SPL.USACE.ARMY.MIL/MISSIONS/REGULATORY](http://WWW.SPL.USACE.ARMY.MIL/MISSIONS/REGULATORY)

**Prior Public Notice text to update:**

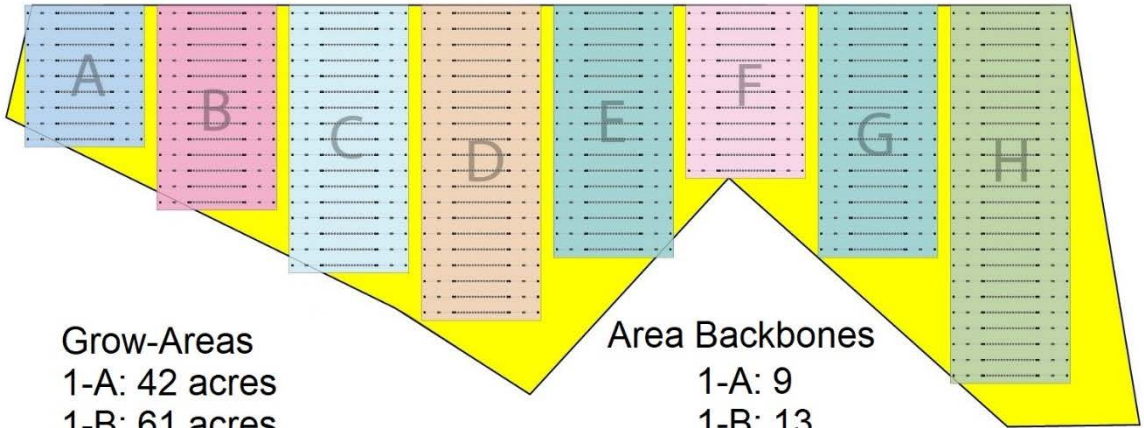
Project description- The applicant proposes to construct three plots of the following dimensions: Plot 1, comprising an area of 760 acres and consisting of eight separate grow-areas with a combined rigging area of 591 acres, Plot 2, comprising an area of 1027 acres consisting of six separate grow-areas with a total rigging area of 948 acre, and Plot 3, comprising a total of 326 acres with one grow-area with a rigging area of 287 acres. The total combined area of all three Plots is 2113 acres. The total combined grow-area is 1826 acres. The unusual, shaped polygons are governed by the need to adapt and comply with the newly disclosed anchoring and fairway requirements.



The total proposed area is 2113 acres consisting of multiple submerged long-lines on which shellfish and kelp would be grown. The location and orientation of each plot and sub-plot grow-area is shown in the attached exhibits. There would be a total of 15 sub-plots of varying sized based on the constraints of each plot polygon. The rigging plans follow the earlier proposed rigging template which consisted of thirty-five long-lines installed in each 100-acre sub-plot, in terms of width of each grow area, and the length of each 210-meter-long backbone, however the total length of each separate grow-area varies based on the unique polygonal shape of Plot 1, 2 and 3,

# Plot 1

760 acres



## Grow-Areas

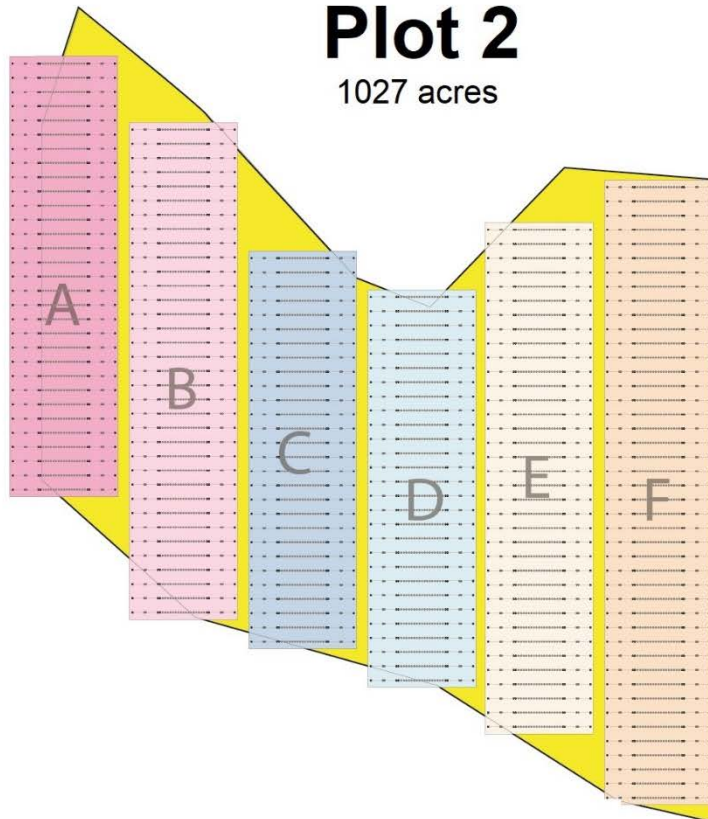
1-A: 42 acres  
1-B: 61 acres  
1-C: 79 acres  
1-D: 94 acres  
1-E: 75 acres  
1-F: 52 acres  
1-G: 75 acres  
1-H: 113 acres

## Area Backbones

1-A: 9  
1-B: 13  
1-C: 17  
1-D: 20  
1-E: 16  
1-F: 11  
1-G: 16  
1-H: 14

# Plot 2

1027 acres



## Grow-Areas

2-A: 146 acres  
2-B: 164 acres  
2-C: 131 acres  
2-D: 131 acres  
2-E: 169 acres  
2-F: 207 acres

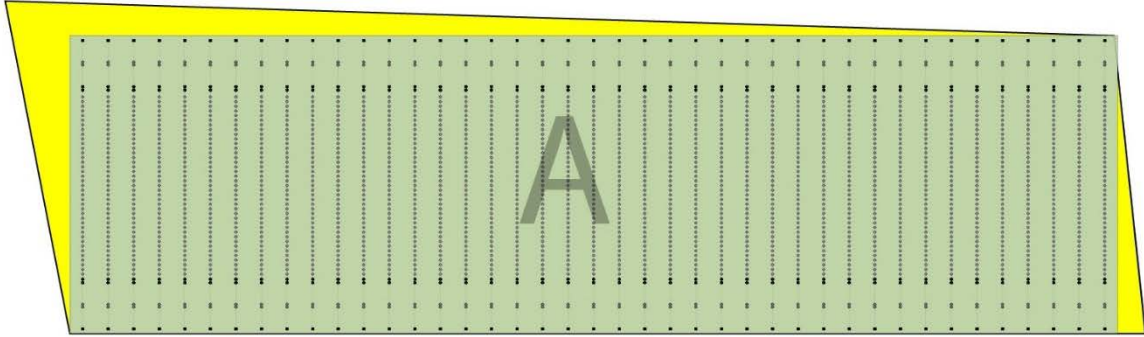
## Backbones/Grow-Area

2-A: 31  
2-B: 35  
2-C: 28  
2-D: 28  
2-E: 36  
2-F: 44

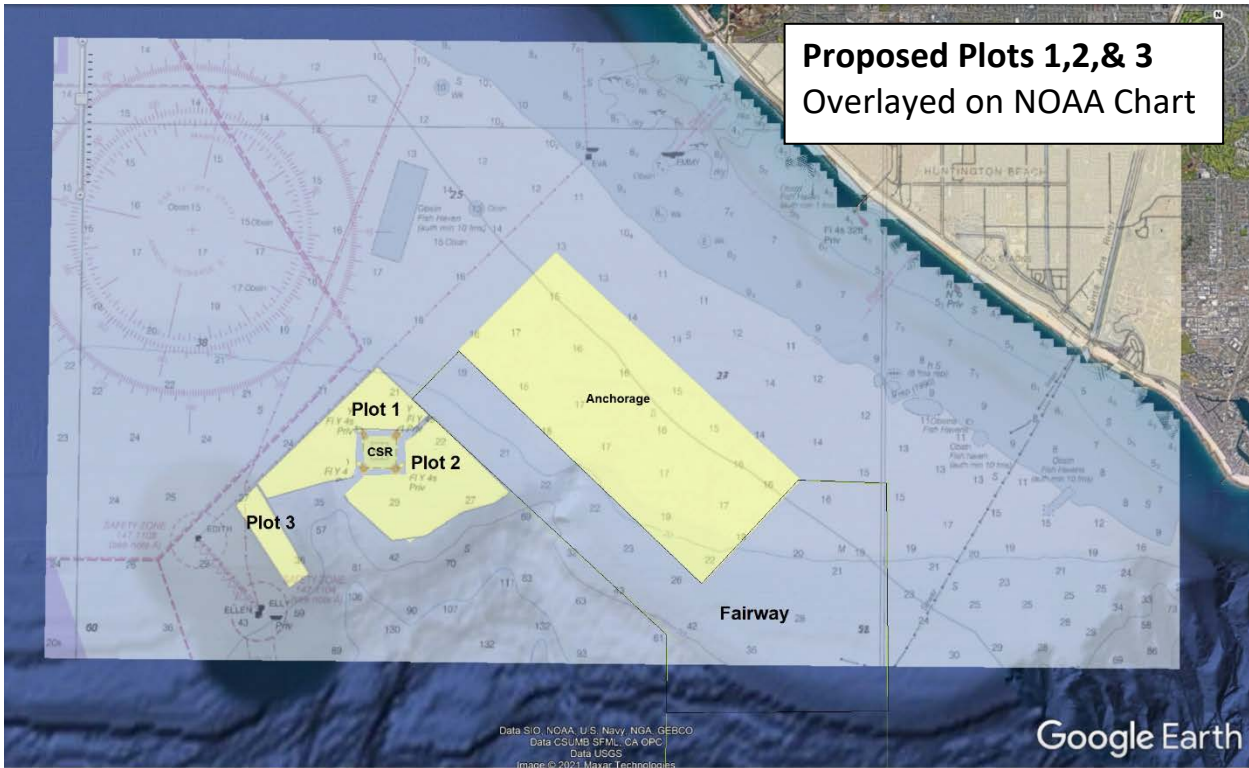
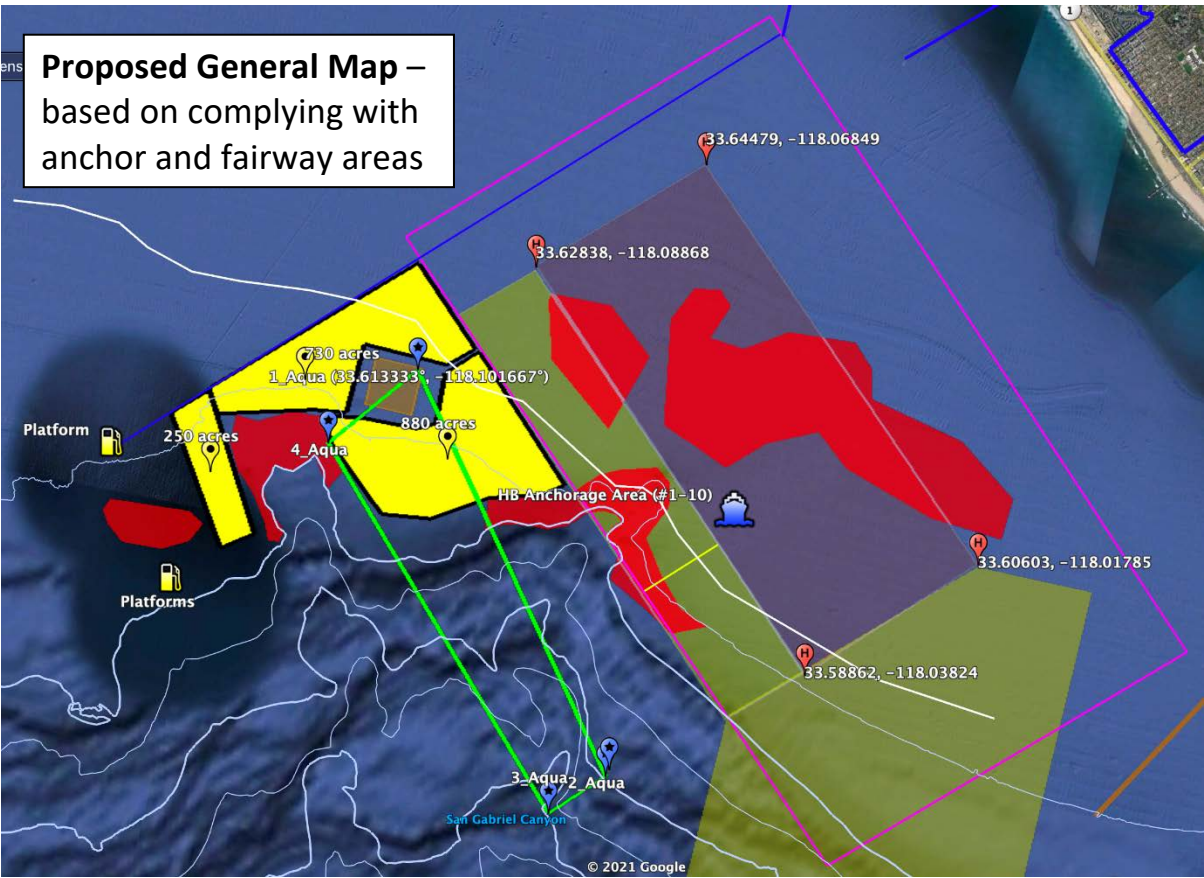


# Plot 3

326 acres

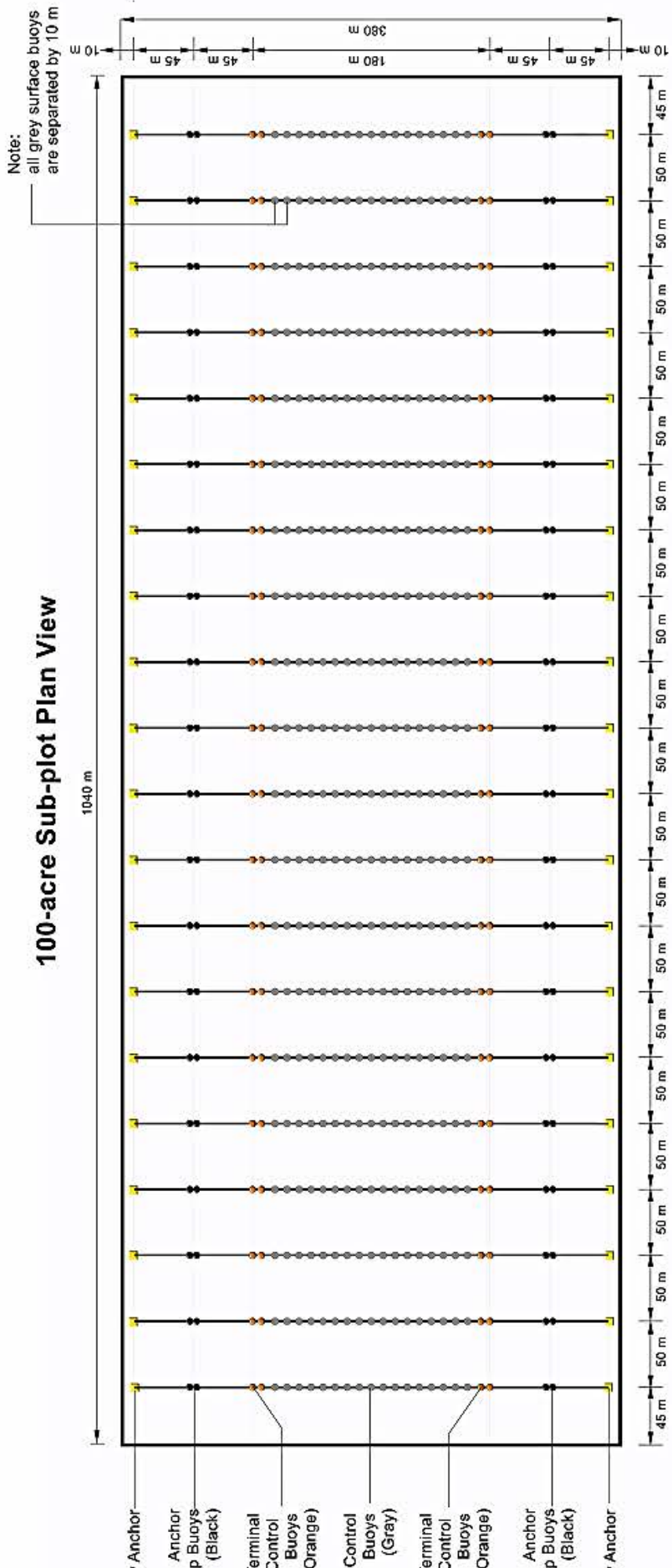


Grow-Area: 287 acres  
Area backbones: 41



Ava

### 100-acre Sub-plot Plan View

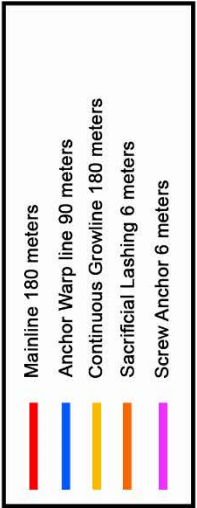
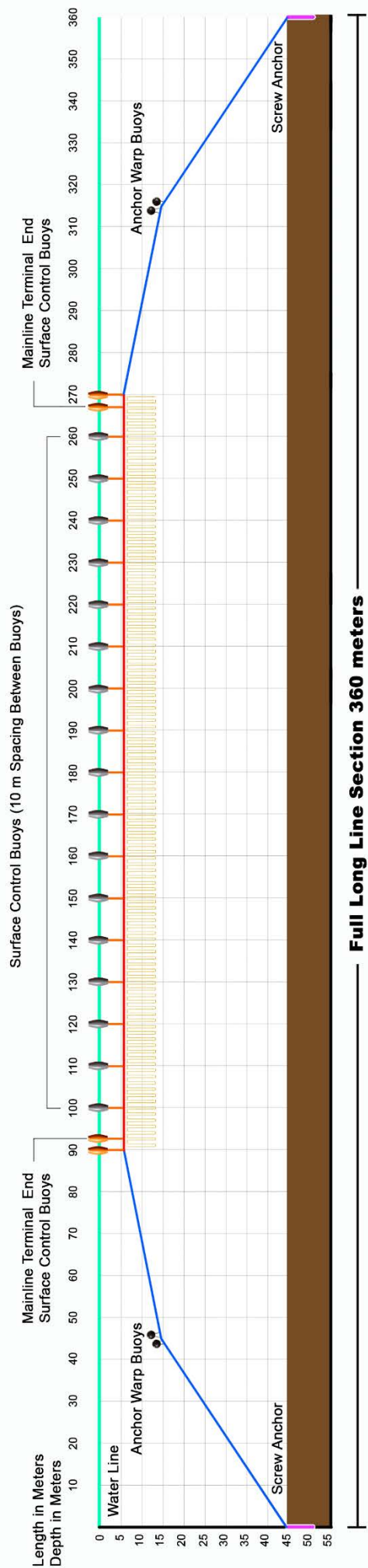


Sub-plots templates consist of twenty (20) 360 m long-lines made up two (2) 90 m anchor warp ropes tied to screw anchors drilled 6 m into the seafloor at both ends of each backbone.

The number of long-lines in the new plan vary based the shape of each of the Plot polygon, as illustrated above.

The anchor warp ropes extend upward and are spliced to 180 m mainlines. The two 90 m anchor warp ropes at each end of the mainline create a 360m long-line.

A (ten) 10 m space at the end of each long-line extends the total length of each 100-acre sub-plot from 380 m to 380 m. There is a 50 m separation between long-lines for safety and to ensure ease of maintenance and harvest.



Plots 1, 2 and 3 are subdivided into sub-plot grow-areas that vary in size. Each sub-plot has the prescribed number of backbones based on the above template.

Anchor-to-anchor points are set at between 360 m and 380m to allow for minor variation in anchor placement.

Long-lines will have a minimum of 50 m spacing between backbones to prevent risk of entanglement.

Such generous spacing between each long-line is especially important after harvest when some grow-lines are empty or recently seeded with spat and adjacent lines are heavy with market-ready mussels

The total number of backbones for the entire project will be 369.

Each longline would consist of a 210-meter-long backbone (growing area), and a 75-meter-long diagonal anchor line extending to a helical screw anchor. Each end of a long-line would be anchored by a single helical screw anchor which would be drilled into the seafloor. Each screw anchor would be about 3.5 meters-long and disturb an approximately 0.1-square-meter area of the seafloor during installation. Each screw anchor would be installed with GIS/GPS navigation to ensure adequate spacing between each long-line. Each backbone portion of a long-line would be held approximately 6 meters below the water surface by a series of small sub-surface ball buoys. At the surface, each long-line would be marked with a series of larger surface barrel-type buoys to hold up the backbone. Grow-lines would be looped over each backbone, and lantern nets would be secured to the backbone by detachable gear. Nothing would be grown from the diagonal anchor lines. Each long-line would be approximately 30 meters from the next adjacent line in a sub-plot. Each sub-plot would be approximately 25 meters from the next sub-plot. There would be a 10-meter buffer between each screw anchor and the edge of a sub-plot. The applicant indicates construction/installation activities on each of three plots would take about 45 days to complete, for a total of 135 days of construction activity. However, the applicant proposes to only install plot 2 and 3 after agency approval and demonstration of success with plot 1.

The applicant proposes to grow the following shellfish and macroalgal species: California mussels (*Mytilus californianus*), Mediterranean mussel (*Mytilus galloprovincialis*), Giant Kelp (*Macrocystis pyrifera*), and Brown kelp, (*Laminaria farlowii*). These species would be grown on the backbone (algae), grow ropes (mussels), or suspended lantern nets (rock scallops). The applicant proposes to obtain shellfish spat and algal spores from the Carlsbad Aquafarms (a CDFW-certified grower and source); if additional sources are needed the applicant proposes to obtain spat and spores from other CDFW-certified sources.

For navigation safety, the site would be marked on the surface by U.S. Coast Guard approved private aids to navigation (PATON). The Corps would require each 1,000-acre plot is mapped by NOAA Fisheries on its marine charts.

Shellfish and kelp products would be harvested at the project site using a specialized boat and returned to the Port of Los Angeles (Alta Sea, Berths 57-60, 2456 Signal Street, San Pedro, CA) for additional processing, packaging, and distribution.

The applicant will be required to develop and implement the following: a maintenance, monitoring and training plan, a debris management plan, a spill prevention and control plan, a gear marking and recovery plan, an invasive species monitoring plan, a marine species entanglement response plan, a structural failure preparedness and response plan, and a decommissioning plan.

The applicant has indicated engineered drawings would be prepared and submitted at a later date. To this end, the Corps will require an analysis of the structural integrity of the proposed design over a range of ocean conditions on the San Pedro shelf.”



**Plot 1 Area**  
**Polygon Vertex Coordinates**

Plot 1 Vx 1: 33°36'19.59"N 118° 7'47.69"W

Plot 1 Vx2: 33°37'32.46"N 118° 6'18.18"W

Plot 1 Vx3: 33°37'2.34"N 118° 5'39.85"

Plot 1 Vx4: 33°36'53.14"N 118° 5'51.97"W

Plot 1 Vx5: 33°36'52.12"N 118° 6'35.39"W

Plot 1 Vx6: 33°36'27.25"N 118° 6'35.52"W

Plot 1 Vx7: 33°36'5.21"N 118° 7'36.72"W

**Plot 2 Area**  
**Polygon Vertex Coordinates**

Plot 2 Vx1: 33°36'14.81"N 118° 6'49.01"W

Plot 2 Vx2: 33°36'24.58"N 118° 6'31.99"W

Plot 2 Vx3: 33°36'24.00"N 118° 5'59.10"W

Plot2 Vx4: 33°36'46.56"N 118° 5'59.36"W

Plot 2 Vx5: 33°37'1.67"N 118° 5'37.60"W

Plot 2 Vx 6: 33°36'14.62"N 118° 4'39.48"W

Plot 2 Vx7: 33°36'8.12"N 118° 4'50.30"W

Plot 2 Vx8: 33°36'2.05"N 118° 5'15.63"W

Plot 2 Vx9: 33°35'41.64"N 118° 5'50.66"W

**Plot 3 Area**  
**Polygon Vertex Coordinates**

Plot 3 Vx1: 33°36'7.36"N 118° 8'5.12"W

Plot 3 Vx2: 33°36'19.94"N 118° 7'47.72"W

Plot 3 Vx3: 33°35'24.35"N 118° 7'6.52"W

Plot 3 Vx4: 33°35'15.01"N 118° 7'23.22"W



Plot 1 Vx2: 33°37'32.46"N 118° 6'18.18"W

Plot 1 Vx3: 33°37'2.34"N 118° 5'39.85"W  
 Plot 2 Vx3: 33°37'1.67"N 118° 5'37.60"W

Plot 1 Vx5: 33°36'52.12"N 118° 6'35.39"W  
 Plot 2 Vx4: 33°36'46.56"N 118° 5'59.36"W  
 Plot 1 Vx4: 33°36'53.14"N 118° 5'51.97"W

Plot 1 Vx6: 33°36'27.25"N 118° 6'35.52"W  
 Plot 2 Vx2: 33°36'24.58"N 118° 6'31.99"W  
 Plot 2 Vx3: 33°36'24.00"N 118° 5'59.10"W

Plot 3 Vx2: 33°36'19.94"N 118° 7'47.72"W  
 Plot 1 Vx1: 33°36'19.59"N 118° 7'47.69"W

Plot 3 Vx1: 33°36'7.36"N 118° 8'5.12"W  
 Plot 1 Vx7: 33°36'5.21"N 118° 7'36.72"W

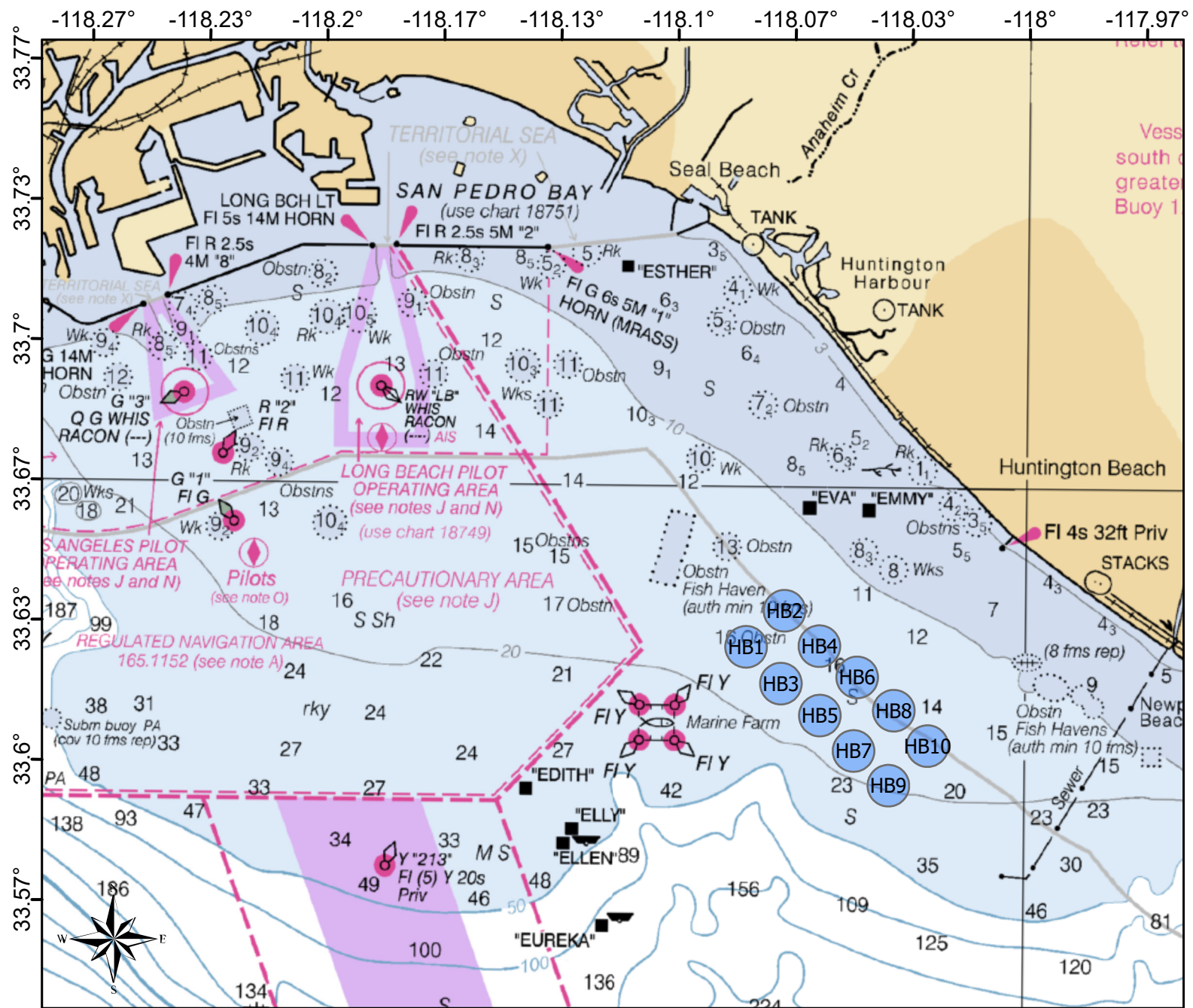
Plot 2 Vx6: 33°36'14.62"N 118° 4'39.48"W  
 Plot 2 Vx7: 33°36'8.12"N 118° 4'50.30"W

Plot 2 Vx8: 33°36'2.05"N 118° 5'15.69"W

Plot 2 Vx9: 33°35'44.97"N 118° 6'16.07"W  
 Plot 2 Vx3: 33°35'41.64"N 118° 5'50.66"W

Plot 3 Vx3: 33°35'24.35"N 118° 7'6.52"W

Plot 3 Vx4: 33°35'15.01"N 118° 7'23.22"W

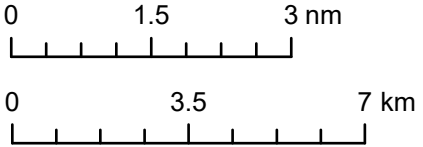


## Legend

- Contingency Anchorages

Scale: 1:150,000

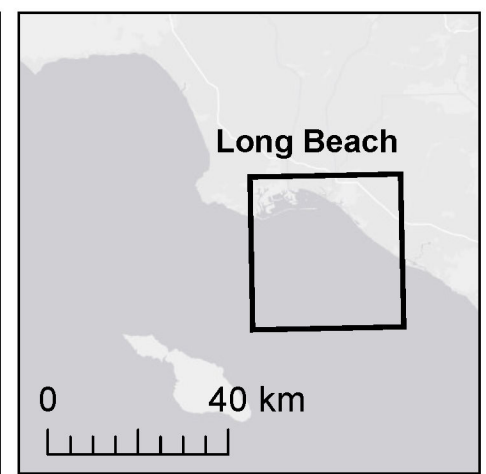
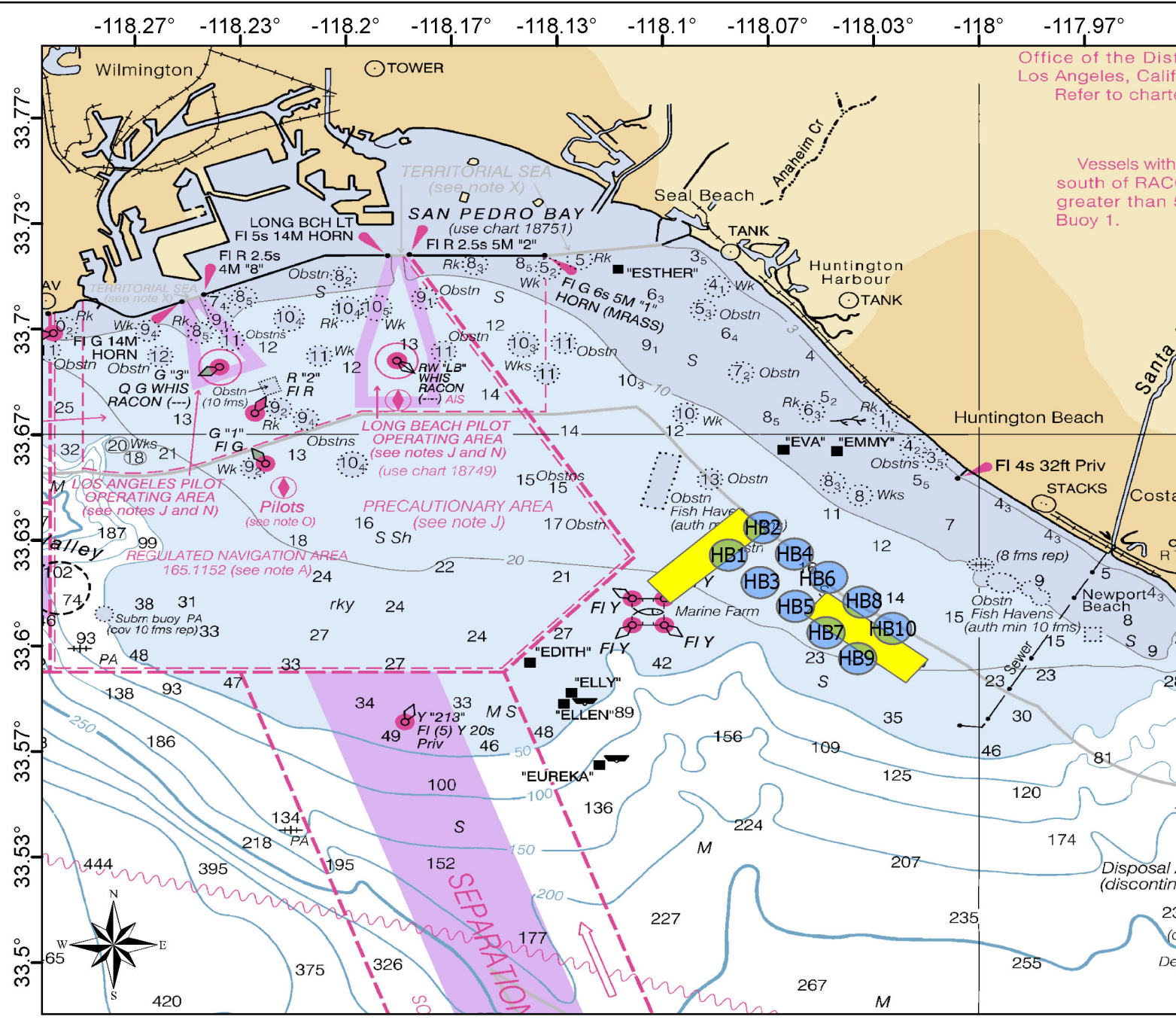
Map intended for planning purposes only: Not intended for navigational purposes NOS National Centers for Coastal Ocean Science Coastal Aquaculture Siting and Sustainability



Map Coordinate System: NAD 1983  
 Service Layer Credits: Chart Tile Service: © OpenStreetMap (and) contributors, CC-BY-SA  
 Light Gray Base: Esri, Garmin, FAO, NOAA, EPA







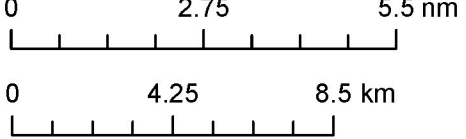
**Legend**

- HB Contingency
- Anchorage
- Avalon Alt B

**ORIGINAL PROPOSAL**

**\*Not under consideration**

Scale: 1:200,000 Map intended for planning purposes only: Not intended for navigational purposes NOS National Centers for Coastal Ocean Science Coastal Aquaculture Siting and Sustainability



Map Coordinate System: NAD 1983 UTM Zone 11  
 Map Projection: Transverse Mercator  
 Service Layer Credits: NOAA\_RNC: NOAA Office of Coast Survey  
 World Light Gray Canvas Base: Esri, HERE, NPS

