

CALIFORNIA COASTAL COMMISSION

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Th20b

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STAFF REPORT: REGULAR CALENDAR

Application No.: 6-18-0288

Applicant: DeSimone, Schragger, & Jokipii

Agent: Bob Trettin

Location: 245, 241, & 235 Pacific Avenue, Solana Beach, San Diego County (APN Nos. 263-312-11, 263-312-12, & 263-312-13)

Project Description: Construct a 150 ft. long, 35 ft. high, 28 in. thick seawall on the public beach and bluff, construct an approximately 45-130 ft. wide, approximately 50 ft. high geogrid structure on the bluff face, install hydroseed and container plantings on the proposed geogrid slope, remove a portion of the existing gunite on the bluff face and install plantings on a portion of the existing gunite that is proposed to be retained.

Staff Recommendation: Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

Staff is recommending that the Commission **approve** the subject shoreline armoring development. The proposed protection would be located entirely on the publicly-owned beach and bluff. The applicants' geotechnical representative has demonstrated that the blufftop residential structures are in danger from erosion due to ongoing bluff collapse and exposure of the clean sand layer below the residences. The Commission's staff engineer and geologist have reviewed the applicants' geotechnical assessment and concur with its conclusions.

However, an important factor in determining whether shoreline protection should be approved is whether the development at risk is entitled to shoreline protection under Section 30235 of the Coastal Act. The homes at 235 and 241 Pacific Avenue were constructed prior to enactment of the Coastal Act. Thus, the residences are considered “existing” for purposes of requiring protection under Section 30235 of the Coastal Act. However, the northernmost home (245 Pacific Avenue) was approved by the Commission in 1996 and is not an existing structure for purposes of Section 30235 of the Coastal Act because it was originally permitted and built after 1976, thereby postdating the enactment of California Coastal Act. Furthermore, at the time of approval, the applicant chose to construct the home seaward of the 40 ft. bluff edge setback and as such, a condition of the CDP approval required that the property owners waive their rights to construct shoreline armoring to protect the portion of the home at 245 Pacific Avenue closer than 40 feet from the bluff edge. While the slope stability analysis shows that the seaward portion of the home at 245 Pacific Avenue is threatened by erosion, the analysis does not indicate that the portion of the home landward of the 40 ft. bluff setback is currently at risk. Thus, the Commission is not required to approve shoreline armoring to protect the bluff top residence at 245 Pacific Avenue.

An alternative to approving the entire 150 ft. long seawall would be to leave an unarmored ‘gap’ of natural bluff fronting the home at 245 Pacific Avenue and to only approve the seawall and geogrid mid and upper bluff structure fronting 235 and 241 Pacific Avenue. This approach would arguably be most consistent with the intent of the Commission’s 1996 approval, which was clearly intended to preclude the construction of shoreline protection in front of the residence if the homeowner made the choice to build in a potentially hazardous location. However, while the Commission is not required to approve protection for the home 245 Pacific Avenue, because the home is adjacent to other homes that are at risk and are entitled to protection, there is no clear way to avoid some form of protection in front of 245 Pacific Avenue. A gap in the seawall would result in potential flanking of the existing permitted seawall to the north of 245 Pacific Avenue and the proposed seawall fronting 235 and 241 Pacific Avenue, thereby impacting the properties up and down coast of 245 Pacific Avenue (249 and 241 Pacific Avenue). While it is likely that armoring in front of 245 Pacific Avenue could be avoided at this time, it would only be through the construction of larger, more impactful shoreline protection on the adjacent lots. For example, east/west directed retaining walls that function as a return walls to the lower seawall below 249 Pacific Avenue and 241 Pacific Avenue might temporarily address the threat to the surrounding existing structures. However, continual monitoring and the on-going construction of additional and larger walls, geogrid, etc. would be necessary as erosion continued to occur. The Commission’s senior engineer and geologist have examined the alternative of not constructing any shoreline armoring seaward of 245 Pacific Avenue and concluded that the impacts to the natural landform and visual quality of the bluff would be greater than the impacts associated with the proposed project, and would be detrimental to the adjacent properties ([Exhibit 15](#)).

Thus, staff is recommending that the proposed shoreline armoring be approved, but only for as long as the existing bluff top structures (235 and 241 Pacific Avenue) that the armoring is authorized to protect still exist. Special Conditions require the applicants to

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submit a complete coastal development permit application to remove or modify the terms of authorization of the armoring when the existing structures warranting armoring are redeveloped, are no longer present, or no longer require armoring. One purpose of these conditions is to tie the life of the shoreline armoring to the structures it is approved to protect, and to waive any potential rights to augment or reconstruct the armoring to protect new development. This helps to preserve future adaptation options that may be necessary to mitigate adverse beach and public access conditions triggered by ongoing erosion and sea level rise.

The applicants have proposed to make a contribution to the mitigation program that would address the sand volume impacts from denial of sand to the littoral cell. This sand would have a value of \$29,669. The beach area itself and degradation of public access to and along the beach that would be impacted due to encroachment and the area impacted by estimated passive erosion over the 20 year mitigation period will be mitigated through the City's Public Recreation Fee program. Thus, the applicants are required to pay a fee of \$127,786, in-lieu of providing new beach area to replace the beach area that will be lost due to the impacts of the seawall for the an initial 20 year period. The City's Public Recreation Fee program would typically require that the fee for any seacave or notch at the base of the bluff also be paid prior to issuance of the Coastal Development Permit. However, in this case, the sand level is too high to safely investigate the extent of any seacave or notch at the site without the use of mechanized digging equipment. Therefore, within 30 days of the start of construction, the applicants is required to submit documentation of the area of any notch or seacave at the base of the bluff to the Commission and to the City and submit an additional an additional in-lieu Public Access Fee to the City for the area based on the City's Public Access Fee method.

Prior to the completion of the initial 20 year period, the applicant is required to submit an amendment application to the Commission to either remove the permitted shoreline armoring or to provide geotechnical reports with evidence that the shoreline armoring must be retained and to provide mitigation for the subsequent 20 year period. In subsequent mitigation periods, mitigation shall include the direct shoreline protection device encroachment and all beach area that would have otherwise been available to the public through passive erosion had the shoreline armoring not been constructed.

With the required public access and recreation mitigation, the impacts of the proposed shoreline protection on regional sand supply and public access and recreation will be mitigated to the extent feasible. To ensure that any future redevelopment, additions, or major structural alterations of these properties is consistent with Chapter 3 policies of the Coastal Act, this permit requires that any future development of the bluff-top properties may not rely upon this shoreline armoring to determine site suitability for such development. Other conditions involve an in-depth alternatives analysis for future reauthorization of the shoreline armoring, ensuring that the appearance of the seawall matches the bluffs, and demonstrating approval from other agencies for the subject project.

Commission staff recommends **approval** of coastal development permit application 6-18-0288, as conditioned.

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Standard of Review: Chapter 3 policies of the Coastal Act, with the certified LUP used as guidance.

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APPENDICES

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EXHIBITS

- [Exhibit 1 – Project Location](#)
- [Exhibit 2 – Aerial Photograph](#)
- [Exhibit 3 – Proposed Seawall Location Photograph](#)
- [Exhibit 4 – Proposed Site Plan](#)
- [Exhibit 5 – 245 Pacific Avenue Section Plan – Existing and Proposed](#)
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- [Exhibit 7 – 235 Pacific Avenue Section Plan – Existing and Proposed](#)
- [Exhibit 8 – Sand Mitigation Calculations](#)
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- [Exhibit 10 – 2018 Photograph Showing Adjacent Seawalls](#)
- [Exhibit 11 – 2018 Photograph Showing Exposed Caissons at 241 Pacific Avenue](#)
- [Exhibit 12 – 2018 Photograph Showing Existing Gunite at 235 Pacific Avenue](#)
- [Exhibit 13 – CDP 6-96-021/Ratkowski \(245 Pacific Avenue\)](#)
- [Exhibit 14 – Appendix C of LUP \(Public Recreation Fee\)](#)
- [Exhibit 15 – Technical Memorandum by Drs. Joseph Street and Lesley Ewing](#)

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-18-0288 subject to the conditions set forth in the staff recommendation.*

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

Resolution:

*The Commission hereby approves coastal development permit **6-18-0288** and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent 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 permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following Special Conditions:

1. **Revised Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit, for review and written approval of the Executive Director, one full-size set of the revised final plans, that substantially conform with the plans submitted to the Commission, titled 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by Soil Engineering Construction, Inc., received August 22, 2018 and the plans titled, Landscape Improvement Plans for 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by George Mercer Associates Inc., received April 17, 2018, except that they shall be modified to reflect all of the following:
 - (a) The geogrid structure on the bluff face shall be constructed to undulate to closely match the appearance of the nearby natural bluff face. The geogrid structure shall include variable thicknesses to provide visual undulations that mimic the nearby natural bluff conditions. At a minimum, the geogrid structure shall include 5 non-evenly spaced, tapered, undulating drainage features, with non-linear edges, that are approximately 2 feet deep and approximately 5 feet wide.
 - (b) The existing gunite on the bluff face fronting 235 Pacific Avenue shall be removed in its entirety and a licensed civil or geotechnical engineer shall be onsite at all times that the gunite is being removed. If during removal, the onsite engineer identifies any safety or bluff stability concerns, evidence of the hazardous conditions and need for retention of the gunite shall be submitted for the review and written approval of the Executive Director, who may allow for retention of some or all of the gunite without an amendment to this permit. If any gunite is retained, it shall be colored to match the adjacent natural bluff.
 - (c) Any existing permanent irrigation system located on the subject sites that drains anywhere on or over the bluff top and face shall be removed or capped.
 - (d) All runoff from impervious surfaces on the top of the bluff shall be collected and directed away from the bluff edge towards the street.
 - (e) A final site plan shall be submitted that includes the bluff top structures and square footage of all bluff top structures and property lines for the subject sites. In addition, all existing accessory improvements (e.g. decks, patios, walls, windscreens, etc.) located in the geologic setback area on the residential sites shall be detailed and drawn to scale on the final approved site plan and shall include

measurements of the distance between the accessory improvements and the bluff edge (as defined by Section 13577 of Title 14, California Code of Regulations) taken at three or more locations. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, or other method that enables accurate determination of the location of structures on the site. No modifications or removal or replacement of any existing accessory structures is authorized by this permit and any such actions shall require a separate coastal development permit or permit amendment.

The permittees 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.

2. Shoreline Structure Authorization, Design, Monitoring and Maintenance.

(a) **Shoreline Structure Terms.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit, for the review and written approval of the Executive Director, a final revised plan for the authorized shoreline structure. The revised plans shall, prior to submittal to the Executive Director, be reviewed and certified by a licensed civil or geotechnical engineer to ensure they are consistent with the Commission's approval and the following specific requirements:

- i. **Authorization Terms.** This CDP authorizes the shoreline structure pursuant to all of the following terms:
 - A. **Expiration.** This authorization expires when the blufftop residence at 235 Pacific Avenue or the blufftop residence at 241 Pacific Avenue is (1) redeveloped as defined in Special Condition 3; (2) is no longer present; or (3) no longer requires shoreline armoring, whichever occurs first. No later than 180 days prior to the anticipated expiration of the permit or in conjunction with redevelopment of either of the properties, the permittees shall apply for a new CDP or amendment to this CDP to remove the shoreline armoring or to modify the terms of its authorization, including with respect to any necessary mitigation.
 - B. **Extension of Authorization and Mitigation.** If either permittee intends to keep any portion of the shoreline structure in place beyond the 20 year mitigation period (beginning on the building permit completion certification date) the permittees shall submit a complete application for a CDP or amendment to this CDP to reassess mitigation for the on-going impacts of the structure, including an evaluation of actions to reduce or eliminate those impacts. The complete application shall be submitted no later than 6 months prior to the end of the mitigation period. Any amendment application shall conform to the Commission's permit filing regulations at the time and shall also include the following at a minimum:

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1. An analysis, based on the best available science and updated standards, of beach erosion, wave run-up, sea level rise, inundation, and flood hazards prepared by a licensed civil engineer with expertise in coastal engineering, and a slope stability analysis prepared by a licensed Certified Engineering Geologist, Geotechnical Engineer, or Registered Civil Engineer with expertise in soils;
2. An evaluation of alternatives that would maintain stability of the pre-Coastal Act structures for their remaining life or site any new development to an inland location, such that further alteration of natural landforms or impact to adjacent City-owned bluffs and beach, tidelands, or public trust lands is avoided;
3. An analysis of the condition of the existing shoreline armoring and all impacts it is having or is likely to have on public access and recreation, scenic views, sand supply, and other coastal resources;
4. An evaluation of the opportunities to remove or modify the existing shoreline armoring in a manner that would eliminate or reduce the impacts, taking into consideration the requirements of the Solana Beach certified LCP and all applicable Chapter 3 policies of the Coastal Act;
5. For amendment applications to extend the authorization period, a proposed mitigation program to address all unavoidable impacts; and
6. A legal description and graphic depiction of all subject property lines and the mean high tide line surveyed by a licensed surveyor within the previous two years, along with written evidence of consent to the amendment application by all landowners, including the City of Solana Beach, the State Lands Commission, and any other entity.

The permittees 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.

- (b) **Structure Color and Texture.** The color and texture of the structure shall be compatible with the nearby unarmored natural bluffs, including, at a minimum, that:
- i. the structure will be designed, including shaped, contoured and textured, as necessary to match the adjacent landforms; and
 - ii. the color, contours, and texture will be maintained throughout the life of the structure.

(c) **Monitoring and Maintenance.**

- i. **Monitoring Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit a monitoring plan, prepared by a licensed geologist, civil engineer, or geotechnical engineer for the review and written approval of the Executive Director. The plan shall be sufficient to assess the condition of the seawall and geogrid structure and shall include at a minimum:
 - A. A description of the approved shoreline protection device;
 - B. A discussion of the goals and objectives of the plan, which shall include observations of whether the seawall remains in its approved state;
 - C. Provisions for taking measurements of the distance between the bluff top structures protected by the seawall and the top of the bluff, including identification of exactly where such measurements will be taken in accordance with Section 13577 of Title 14 of the California Code of Regulations, e.g. by reference to benchmarks, survey positions, points shown on an exhibit, etc., and the frequency with which such measurements will be taken;
 - D. Mean High Tide Line Monitoring. Monitoring pegs or markers flush with the seawall and suitable to withstand a marine environment shall be installed at ten foot intervals along the face of the entire seawall at the same elevation of the MHTL and at an elevation of five feet above the MHTL. The placement of the monitoring pegs or markers shall be certified by a licensed surveyor. The monitoring pegs or markers shall be inspected regularly and any missing pegs or markers shall be replaced within a month from the time that the missing peg or marker is noticed; and
 - E. Provisions for submission of “as-built” plans, showing the permitted structure in relation to the existing topography and showing the measurements described in subsection (c)i.C. of this condition, within 30 days after completion of construction.
- ii. **Monitoring Requirement.** By May 1 of each third year from the date of approval and for the life of the structure, the permittees shall submit a monitoring report that has been prepared by a licensed geologist, civil engineer, or geotechnical engineer. Each monitoring report shall contain the following, at a minimum:
 - A. An evaluation of the condition and performance of the approved shoreline protection device, including an assessment of whether any weathering or damage has occurred that could adversely impact future performance of the device;

- B. All measurements taken in conformance with the approved monitoring plan;
- C. An analysis of erosion trends, annual retreat, or rate of retreat of the bluff based upon the measurements and in conformance with the approved monitoring plan; and
- D. Recommendations for repair, maintenance, modifications or other work to the device.

If the monitoring report contains recommendations for repair, maintenance or other work, including maintenance of the color of the structure to ensure a continued match with the surrounding native bluffs, the permittees shall contact the Executive Director to determine whether a coastal development permit or an amendment to this permit is legally required, and, if required, shall subsequently apply for a coastal development permit or permit amendment for the required maintenance within 90 days of the report submittal.

- iii. Additional monitoring reports to the City and Coastal Commission shall be required every five years from the date of CDP issuance until CDP expiration, which evaluate whether or not the shoreline protection device is still required to protect the existing structure it was designed to protect. Within six months of a determination that the shoreline protection device authorized by this permit is no longer required to protect the existing structures it was designed to protect, the permittees shall submit a CDP application to remove the shoreline protection device.

3. **Reliance on Permitted Shoreline Armoring.** No future development that is not otherwise exempt from coastal development permit requirements, including additions, major structural alterations, or redevelopment of the structures on the subject blufftop properties, may rely on the permitted shoreline armoring to establish geologic stability or protection from hazards. Such future development and redevelopment on the site shall be sited and designed to be safe without reliance on shoreline armoring, or shall not be permitted. As used in this condition, “redeveloped” or “redevelopment” means:

- (a) Development that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, or (3) demolition or replacement of an existing home or other principal structure, or portions thereof, which results in:
 - i. Alteration (including demolition, renovation or replacement) of 50% or more of major structural components including exterior walls, floor structure, roof structure or foundation, or a 50% increase in gross floor area. Alterations under this definition are not additive between individual major structural

components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP, and as further defined in the Solana Beach LUP as approved by the Commission;

OR

- ii. Alteration (including demolition, renovation or replacement) of less than 50% of a major structural component where the proposed alteration would result in cumulative alterations exceeding 50% or more of a major structural component, taking into consideration previous alterations approved on or after the date of certification of the LUP; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP.
4. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the applicants acknowledge and agree (i) that the site may be subject to hazards, including but not limited to waves, storms, flooding, landslide, bluff retreat, erosion, and earth movement, many of which will worsen with future sea level rise; (ii) to assume the risks to the permittees and the properties that are the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.
 5. **State Lands Commission Approval.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, a written determination from the State Lands Commission that:
 - (a) No state lands are involved in the development; or
 - (b) State lands are involved in the development, and all permits required by the State Lands Commission have been obtained; or
 - (c) State lands may be involved in the development, but pending a final determination of state lands involvement, an agreement has been made by the applicants with the State Lands Commission for the project to proceed without prejudice to the determination.

6. **Future Response to Erosion.** If the permittees intends to keep any portion of the shoreline structure in place beyond the 20 year mitigation period or if in the future the permittees seek a coastal development permit to construct additional bluff or shoreline protective devices, the permittees agree, by acceptance of this permit, to include in the permit application information concerning specific alternatives to the proposed bluff or shoreline protection that will eliminate impacts to scenic visual resources, public access and recreation, and shoreline processes. Alternatives shall include, but not be limited to: relocation of all or portions of the principal structures that are threatened; structural underpinning; and other known remedial measures capable of protecting the principal residential structures and allowing reasonable use of the properties without constructing additional bluff or shoreline stabilization devices. The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission or the applicable local government implementing a certified Local Coastal Plan to evaluate the feasibility of each alternative and whether each alternative is capable of protecting the relevant existing principal structures for the remainder of their economic lives. No additional bluff or shoreline protective devices may be constructed unless and until the alternatives required above are demonstrated to be infeasible. Any additional shoreline protective devices may be constructed only to protect existing principal structures. Any future redevelopment on the lots may not rely on the subject shoreline protective devices to establish geological stability or protection from hazards.

7. **Mitigation for Impacts to Public Access and Recreational Opportunities/Sand Supply.**

(a) PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, a fee of \$127,786 has been deposited in a Shoreline Account established by the City of Solana Beach, in-lieu of providing new beach area to replace the beach area that will be lost due to the impacts of the seawall for the an initial 20 year period beginning on the building permit completion certification date. All interest earned by the account shall be payable to the account for the purposes stated below.

Public Recreation Fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment and retention as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access Capital Improvement Projects (CIP) identified by the City where the money could be allocated. The Public Recreation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

(b) WITHIN 30 DAYS OF THE START OF CONSTRUCTION, the applicants shall submit documentation of the area (i.e., the depth and width between the rear of the notch or seacave and the bluff drip line) of any notch or seacave at the base of the bluff to the Commission and to the City and shall submit an

additional an additional in-lieu Public Access Fee to the City for the area based on the City's Public Access Fee method.

- (c) PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of \$29,669 has been deposited in a Shoreline Account established by the City of Solana Beach, in-lieu of providing the total amount of sand to replace the sand that will be lost due to the impacts of the seawall for the an initial 20 year period beginning on the building permit completion certification date. All interest earned by the account shall be payable to the account for the purposes stated below.

Sand Mitigation Fees must be expended for sand replenishment and potentially for retention projects as a first priority and may be expended for public access and public recreation improvements as secondary priorities where an analysis done by the City determines that there are no near-term, priority sand replenishment CIP identified by the City where the money could be allocated. The Sand Mitigation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

- 8. **Storage and Staging Areas/Access Corridors.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, final plans indicating the location of access corridors to the construction site and staging areas. The final plans shall indicate that, at a minimum:

- (a) No overnight storage of equipment or materials may occur on sandy beach or at the Fletcher Cove Parking Lot, and the use of other public parking spaces shall be minimized. The permittee may not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no machinery may be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seawall. Construction equipment may not be washed on the beach or public parking lots or access roads;
- (b) Construction access corridors shall be located in a manner that has the least impact on public access to and along the shoreline;
- (c) No work may occur on the beach on weekends or holidays or between Memorial Day weekend and Labor Day of any year;
- (d) The applicants shall submit evidence that the approved plans and plan notes have been incorporated into construction bid documents; and

- (e) The permittees shall remove all construction materials and equipment from the staging site and restore the staging site to its prior-to-construction condition within 72 hours following completion of the development.

The permittees shall undertake the development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the final plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

- 9. **Water Quality--Best Management Practices.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit for review and written approval of the Executive Director a Best Management Practices Plan that ensures no shotcrete or other construction byproduct will be allowed onto the sandy beach or allowed to enter into coastal waters. The Plan shall apply to both concrete pouring/pumping activities as well as shotcrete/concrete application activities. During shotcrete/concrete application specifically, the Plan shall at a minimum provide for all shotcrete/concrete to be contained through the use of tarps or similar barriers that completely enclose the construction area and that prevent shotcrete/concrete contact with beach sands and coastal waters. All shotcrete and other construction byproduct shall be properly collected and disposed of off-site.

The applicants shall undertake the development in accordance with the approved Plan. Any proposed changes to the approved Plan shall be reported to the Executive Director. No changes to the Plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

- 10. **Encroachment Agreement.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicants shall submit to the Executive Director for review and approval documentation demonstrating that the applicants have executed an Encroachment Agreement with the City, recognizing that the seawall is located on property owned by the City and is subject to removal by request of the City at any time, or evidence that an Encroachment Agreement is not required by the City. Within 90 days of the City's request for removal, the applicants shall submit an amendment to this CDP proposing removal of the encroachment in its entirety. Permittees may remove the encroachment only after the Commission issues the CDP amendment.
- 11. **As-Built Plans.** WITHIN 30 DAYS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit two copies of As-Built Plans showing all development completed pursuant to this coastal development permit; all property lines; and all residential development inland of the seawall structure. The As-Built plans shall include the depth of any notch in the bluff as documented according to the requirements of Special Condition 7(b). The As-Built Plans shall be substantially consistent with the approved project plans described in Special Condition 1, including providing for all of the same requirements specified in those plans. The As-Built

Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD) 88. The As-Built Plans shall include color photographs that clearly show all components of the as-built project, with a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be taken from representative viewpoints of beaches located upcoast, downcoast, and seaward of the project site. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, whose qualifications are acceptable to the Executive Director. The engineer shall verify that the shoreline armoring has been constructed in conformance with the approved final plans.

12. **Public Rights.** The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that exist or may exist on the property. By acceptance of this permit, the applicants acknowledge, on behalf of him/herself/itself and his/her/its successors in interest, that issuance of the permit and construction of the permitted development shall not constitute a waiver of any public rights that may exist on the property.

13. **Deed Restriction.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and approval documentation demonstrating that the landowners have executed and recorded against their respective parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

14. **Construction Site Documents & Construction Coordinator.** DURING ALL CONSTRUCTION:

(a) **Construction Site Documents.** Copies of the signed coastal development permit and the approved Construction Plan shall be maintained in a conspicuous location at the construction job site at all times, and such copies shall be available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the coastal development permit and the approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.

(b) **Construction Coordinator.** A construction coordinator shall be designated to be

contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and the coordinator's contact information (office address, office and mobile phone numbers, e-mail address) for the duration of construction shall be conspicuously posted at the job site where such contact information is readily visible from public viewing areas, along with an indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 72 hours of receipt of the complaint or inquiry.

- (c) **Notification.** The permittee shall notify planning staff of the Coastal Commission's San Diego Coast District Office at least three working days in advance of commencement of construction or maintenance activities, and immediately upon completion of construction or maintenance activities.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The proposed development involves the construction of a 150 ft. long, 35 ft. high, 28 in. wide structural shotcrete tied-back seawall to fully armor the entirety of the unarmored publicly-owned coastal bluff area between an existing seawall to the north (Ref: CDP 6-13-0437/ Presnell/Graves LLC.) and an existing seawall to the south (Ref: CDP 6-09-033/Garber et al.). The proposed seawall would be located on city-owned public beach and the bluff face of an 85 ft.-high coastal bluff fronting three existing single family residences located at 235, 241, and 245 Pacific Avenue in the City of Solana Beach. The project also includes construction of an approximately 45-130 ft. wide, approximately 50 ft. high geogrid structure on the bluff face, largely below the two homes at 235 and 241 Pacific Avenue ([Exhibits 3-7](#)). Additionally, the applicants propose to remove failing portions of old, fragmented gunite located on the upper bluff beneath 235 Pacific, and install landscaping within both the new geogrid structure and the remaining intact portion of the existing gunite([Exhibit 11](#)). The project location is approximately 600 ft. north of Fletcher Cove, the one the City's primary beach parks and accessways ([Exhibits 1-2](#)).

Site History (235 Pacific Avenue)

- The existing 1,382 sq. ft. single family bluff top home was constructed prior to the Coastal Act, in 1954.
- In September 1975, the San Diego Coast Regional Commission approved a remodel and a 505 sq. ft. addition to the home, resulting in a total of 1,382 sq. ft. (F2877/Myers).

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- Photographs of the site between 1972 and present show concrete gunite on the upper bluff. Recent photographs of the concrete gunite appear to show that it is failing.
- There is no shoreline armoring fronting the subject site (aside from the failing concrete gunite).
- The existing home is currently located approximately 11 ft. from the bluff edge.

Site History (241 Pacific Avenue)

- The existing 3,419 single family bluff top home was constructed in the mid-1950s.
- In April of 1989, the Commission approved a remodel and a 2,040 sq. ft. second story addition to the residence, resulting in a total of 3,419 sq. ft. (CDP 6-89-029/Haggerty).
- In October of 2008, the Commission approved the construction of nine drilled pier concrete caissons (approximately 30 in. diameter, 45 ft. depth and placed 8-ft. on center) with a grade beam on top supported with 6 tiebacks located approximately 5 ft. seaward of the existing residence (6-07-132/Hawkins). The bluff seaward of the caissons failed soon after installation and the caissons are currently exposed ([Exhibit 11](#)).
- The exposed caissons represent the only shoreline armoring fronting the site.
- The existing home is currently located approximately 3 ft. from the bluff edge.

Site History (245 Pacific Avenue)

- In May of 1996, the Commission approved a Coastal Development Permit for the demolition of an existing 1,135 sq. ft. single-family residence and an existing 186 sq. ft. detached garage and construction of the 3,951 sq. ft. tri-level single-family residence on the bluff-top lot. The applicant chose to construct the home seaward of the 40 ft. bluff edge setback and as such, a condition of the CDP approval required that the applicant waive his right to construct shoreline armoring to protect the portion of the home closer than 40 feet from the bluff edge (CDP 6-96-021/Ratkowski) ([Exhibit 13](#)).
- The existing home is currently located approximately 22 ft. from the bluff edge and there is no shoreline armoring fronting the site.

The Commission has certified the City's Land Use Plan (LUP). However, the City does not yet have a certified Implementation Plan. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the certified LUP used as guidance.

Other Shoreline Armoring in the Surrounding Area

There is a significant amount of existing shoreline protection adjacent to the subject site. A similar seawall to that proposed fronts the bluff for the next five homes to the south of the unarmored bluff gap (Ref: CDP 6-09-033/Garber et al.) and a continuous seawall has been constructed fronting 24 properties to the north (Ref: seawalls from south to north -

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CDP 6-13-0437/ Presnell & Graves LLC.; 6-99-100/ Presnell et al.; 6-03-126/Corn & Hajjar; 6-00-036/ Corn & Scism; 6-00-138/Greenberg & Kinzel; 6-02-002/Gregg & Santina; 6-13-025/Koman et al.; 6-02-084/Scism; 6-08-073/Cummings & DiNoto, et. al.; 6-04-083/Cumming & Johnson; 6-08-68/Hamilton Trust; 6-07-134/Brehmer, Matchinske, & Caccavo) ([Exhibit 10](#)).

B. GEOLOGIC CONDITIONS AND HAZARDS

As described above, the standard of review is Chapter 3 of the Coastal Act, with the City's LUP providing non-binding guidance. As such, applicable Coastal Act policies are cited in this report, as well as certain LUP policies for guidance as relevant.

Coastal Act Section 30235 addresses the use of shoreline protective devices:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Coastal Act Section 30253 addresses the need to ensure long-term structural integrity, minimize future risk, and to avoid landform altering protective measures. Section 30253 provides, in applicable 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.*
- (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs...*

Coastal Act Sections 30210, 30211, 30212, 30212.5, and 30221 require that public access and use of the coast shall be maximized, that new development generally should provide access, that development shall not interfere with the public's right to access the coast and use of dry sand beaches, and that oceanfront land suitable for recreational activities shall be protected. As stated elsewhere in this report, the physical encroachment of a protective structure on the beach reduces the beach area available for public use and is therefore a significant adverse impact. Furthermore, when the back beach is fixed with a shoreline armoring device, passive erosion is halted and additional public beach area can no longer be created.

Section 30210

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.

Section 30211

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

Section 30212

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

Section 30212.5

Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

Section 30221

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

In addition, the following City of Solana Beach Land Use Plan (LUP) language provides additional guidance regarding geologic hazards and shoreline protection:

Page 13 of the Hazards and Shoreline/Bluff Development chapter states the following, in part:

The following describes the types of preferred bluff retention systems to protect the lower bluff only:

[...]

Higher Seawall/Clean Sand Lens Encapsulation (See Appendix B Figure 2) – If the clean sand lens has been exposed, it may be necessary to build a seawall high enough [sic] cover this segment of the bluff face. This method consists of a structurally engineered seawall (with tiebacks into the sandstone) approximately 35' high to protect and encapsulate the clean sand lens at the base of the terrace deposits. The wall is required to have a textured face mimicking the existing material. If treated at this stage, the bluff retention system will minimize or prevent the need for future mid or upper bluff stabilization.

Policy 4.17: New development shall be set back a safe distance from the bluff edge, with a reasonable margin of safety, to eliminate the need for bluff retention devices to protect the new improvements. All new development, including additions to existing structures, on bluff property shall be landward of the Geologic Setback Line (GSL) as set forth in Policy 4.25. This requirement shall apply to the principal structure and accessory or ancillary structures such as guesthouses, pools, tennis courts, cabanas, and septic systems, etc. Accessory structures such as decks, patios, and walkways, which are at-grade and do not require structural foundations may extend into the setback area no closer than five feet from the bluff edge. On lots with a legally established bluff retention device, the required geologic analysis shall describe the condition of the existing seawall; identify any impacts it may be having on public access and recreation, scenic views, sand supply and other coastal resources; and evaluate options to mitigate any previously unmitigated impacts of the structure or modify, replace, or remove the existing protective device in a manner that would eliminate or reduce those impacts. In addition, any significant alteration or improvement to the existing structure shall trigger such review (i.e. the analysis of the seawall) and any unavoidable impacts shall be mitigated.

Policy 4.18: A legally permitted bluff retention device shall not be factored into setback calculations. Expansion and/or alteration of a legally permitted bluff retention device shall include a reassessment of the need for the shoreline protective device and any modifications warranted to the protective device to eliminate or reduce any adverse impacts it has on coastal resources or public access, including but not limited to, a condition for a reassessment and reauthorization of the modified device pursuant to Policy 4.52.

Policy 4.23: Where setbacks and other development standards could preclude the construction of a home the City may consider options including but not limited to reduction of the two car onsite parking space requirement to a one car onsite parking requirement or construction within five feet of the public right of way front yard setback for all stories as long as adequate architectural relief (e.g., recessed windows or doorways or building articulation) is maintained as determined by the City. The City may also consider options including a caisson foundation with a minimum 40 foot bluff top setback to meet the stability requirement and avoid alteration of the natural landform along the bluffs. A condition of the permit for any such home shall expressly require waiver of any rights to new or additional bluff

retention devices which may exist and recording of said waiver on the title of the bluff property.

Policy 4.45: *The City has adopted preferred bluff retention solutions (see Appendix B) to streamline and expedite the City permit process for bluff retention devices. The preferred bluff retention solutions are designed to meet the following goals and objectives:*

- (1) Locate bluff retention devices as far landward as feasible;*
- (2) Minimize alteration of the bluff face;*
- (3) Minimize visual impacts from public viewing areas;*
- (4) Minimize impacts to adjacent properties including public bluffs and beach area; and,*
- (5) Conduct annual visual inspection and maintenance as needed. [...]*

Policy 4.47: *All proposed development on a beach or along the shoreline, including a shoreline protection structure located within the jurisdiction of the State Lands Commission: (1) must be reviewed and evaluated in writing by the State Lands Commission and (2) may not be permitted if the State Lands Commission determines that the proposed development is located on public tidelands or would adversely impact tidelands unless State Lands Commission approval is given in writing*

Policy 4.49: *Coastal structures shall be approved by the City only if all the following applicable findings can be made and the stated criteria satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and subject to an encroachment/removal agreement approved by the City.*

(A) Based upon the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below.

- (1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure.*
- (2) The coastal structure is more likely than not to preclude the need for a larger coastal structure or upper bluff retention structure. Taking into consideration any applicable conditions of previous permit approvals for development at the subject site, a determination must be made based on a detailed alternatives analysis that none of the following alternatives to the coastal structure are currently feasible, including:*

- *A Seacave/Notch Infill;*
- *A smaller coastal structure; or*
- *Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure, which might include other non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, and contiguous bluff properties;*

(3) The bluff property owner did not create the necessity for the coastal structure by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were reasonable, the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence, as well as, relevant facts and circumstances.

(4) The location, size, design and operational characteristics of the proposed coastal structure will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar coastal structure and the coastal structure is the minimum size necessary to protect the principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP.

(B) The coastal structure shall meet City Design Standards, which shall include the following criteria to ensure the coastal structure will be:

(1) Constructed to resemble as closely as possible the natural color, texture and form of the adjacent bluffs;

(2) Landscaped, contoured, maintained and repaired to blend in with the existing environment;

(3) Designed so that it will serve its primary purpose of protecting the bluff home or other principal structure, provided all other requirements under the implementing ordinances are satisfied, with minimal adverse impacts to the bluff face;

(4) Reduced in size and scope, to the extent feasible, without adversely impacting the applicants' bluff property and other properties; and

(5) Placed at the most feasible landward location considering the importance

of preserving the maximum amount of natural bluff and ensuring adequate bluff stability to protect the bluff home, City facility, or City infrastructure.

(C) Mitigation for the impacts to shoreline sand supply, public access and recreation and any other relevant coastal resource impacted by the coastal structure is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the coastal structure beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the coastal structure to lessen the coastal structure's impacts on coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of CDP issuance until CDP expiration, which evaluate whether or not the coastal structure is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized coastal structure within six months of a determination that the coastal structure is no longer required to protect the existing structure it was designed to protect.

Policy 4.52: *An upper bluff system shall be approved only if all the following applicable findings can be made and the stated criteria will be satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and subject to an encroachment/removal agreement approved by the City.*

(A) Based on the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below.

(1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure in danger from erosion and, that

(2) The bluff home, city facility, city infrastructure, and/or principal structure is more likely than not to be in danger within one year after the date an application is made to the City.

Taking into consideration any applicable conditions of previous permit approval for development at the subject site, determination must be made based on a detailed alternatives analysis that none of the following alternatives to the upper bluff system are then currently feasible, including:

- *No upper bluff system;*

- *Vegetation;*
- *Controls of surface water and site drainage;*
- *A revised building footprint and foundation system (e.g., caissons) with a setback that avoids future exposure and alteration of the natural landform;*
- *A smaller upper bluff system;*
- *Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure which might include tiebacks, other feasible non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, the public beach, and, contiguous bluff properties; and,*
- *Removal and relocation of all, or portions, of the affected bluff home, city facilities or city infrastructure.*

(3) The bluff property owner did not create the necessity for the upper bluff system by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were reasonable, the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence as well as relevant facts and circumstances.

(4) The location, size, design and operational characteristics of the proposed upper bluff system will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar upper bluff system and the upper bluff system is the minimize size necessary to protect the existing principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP.

(B) The upper bluff system shall meet City Design Standards applicable to bluff retention devices, including ensuring the natural bluff face is preserved to the greatest extent feasible, by using soft systems such as Geogrid, Geoweb, and planted with native species. The upper bluff system shall be designed to minimize alterations of natural landforms and shall not have a material adverse visual impact. The upper bluff slope shall be designed to have both vertical and horizontal relief.

(C) All upper bluff systems shall be subject to the same permitting time frames as specified for a coastal structure, and may be subject to removal based upon the same time frames and similar criteria set forth for removal of coastal structures, as reasonably determined by the City.

(d) Mitigation for the impacts to shoreline and sand supply, public access and recreation and any other relevant coastal resource impacted by the upper bluff system is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the upper bluff system beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the upper bluff system to lessen the upper bluff system's impacts on coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of the CDP issuance until CDP expiration, which evaluate whether or not the upper bluff system is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized upper bluff system within six months of a determination that the upper bluff system is no longer required to protect the existing structure it was designed to protect.

Policy 4.53: *All permits for bluff retention devices shall expire when the currently existing blufftop structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and a new CDP must be obtained. Prior to expiration of the permit, the bluff top property owner shall apply for a coastal development permit to remove, modify or retain the protective device. In addition, expansion and/or alteration of a legally permitted existing bluff retention device shall require a new CDP and be subject to the requirements of this policy.*

The CDP application shall include a re-assessment of need for the device, the need for any repair or maintenance of the device, and the potential for removal based on changed conditions. The CDP application shall include an evaluation of:

- The age, condition and economic life of the existing principal structure;*
- changed geologic site conditions including but not limited to, changes relative to sea level rise, implementation of a long-term, large scale sand replenishment or shoreline restoration program; and*
- any impact to coastal resources, including but not limited to public access and recreation.*

The CDP shall include a condition requiring reassessment of the impacts of the device in 20-year mitigation periods pursuant to Policies 4.48 and 4.51.

No permit shall be issued for retention of a bluff retention device unless the City finds that the bluff retention device is still required to protect an existing principal structure in danger from erosion, that it will minimize further

alteration of the natural landform of the bluff, and that adequate mitigation for coastal resource impacts, including but not limited to impacts to the public beach has been provided.

Policy 4.62: *Existing bluff retention devices which are not considered preferred bluff retention solutions and do not conform to the provisions of the LCP, including the structural or aesthetic requirements may be repaired and maintained to the extent that such repairs and/or maintenance conform to the provisions of the LCP...*

The LUP defines Bluff Top Redevelopment as follows:

Bluff Top Redevelopment: *Shall apply to proposed development located between the sea and the first public road paralleling the sea (or lagoon) that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, (3) and/or demolition of an existing bluff home or other principal structure, or portions thereof, which results in:*

(a) Alteration of 50% or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50% increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP.

(b) Demolition, renovation or replacement of less than 50% of a major structural component where the proposed alteration would result in cumulative alterations exceeding 50% or more of a major structural component, taking into consideration previous alterations approved on or after the date of certification of the LUP; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP.

The Coastal Act and certified LUP acknowledge that seawalls, revetments, cliff retaining walls, groins and other such structural or “hard” methods designed to forestall erosion alter natural landforms and natural shoreline processes resulting in a variety of negative impacts on coastal resources, including adverse effects on sand supply, public access and recreation, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, including ultimately resulting in the loss of beach. Thus, such devices may be constructed only to protect principal structures or public beaches in danger from erosion, and only when designed to eliminate or mitigate adverse impacts on local sand supply.

In the majority of the City of Solana Beach there is a “clean sand” lens located between the Torrey Sandstone and Marine Terrace deposits at approximately elevation +25 to +35 feet Mean Sea Level (MSL). This clean sand lens consists of a layer of sand with a limited amount of capillary tension and a very minor amount of cohesion, which causes

the material to erode easily, making this clean sand lens, once exposed, susceptible to windblown erosion and continued sloughing as the sand dries out and loses the capillary tension that initially held the materials together. Geotechnical reports associated with developments near this site have stated that minor disturbances such as gentle sea breezes, landing birds or vibrations from low-flying helicopters, can be sufficient triggers of small- or large-volume bluff collapses, since the loss of the clean sand eliminates the support for the overlying, slightly more cemented, terrace deposits. Because of the cohesionless character of the clean sand, once deposits are exposed, they continue to slump on an ongoing basis as a result of very small triggers such as traffic vibrations or wind erosion. Continued sloughage results in the further exposure of more clean sand, and ongoing upper bluff collapse. This cycle occurs so quickly (over months or days, rather than years) that the upper bluff may never achieve a stable angle of repose. Unless the base of the bluff is afforded shoreline protection and the clean sand lens is contained, additional bluff failures can further expose the layer of clean sand and result in a potential upper bluff failure and an immediate threat to the structures at the top of the bluff.

The factor of safety is an indicator of slope stability where a value of 1.5 is the industry-standard value for geologic stability of new development placed on a slope. In theory, failure should occur when the factor of safety drops to 1.0, and no slope area with a proposed new-development footprint should have a factor of safety less than 1.5.

At the subject site, an ~10 ft. thick clean sand layer is exposed across a 74 ft. long section of the bluff. The slope stability analysis performed by the applicants' engineer indicates that further collapse of the upper bluff would threaten the structures at the top of the bluff. Slope static/pseudostatic stability analyses for the bluff at 235 Pacific, 241 Pacific, and 245 Pacific demonstrate a factor of safety of 1.22/0.95, 1.12/0.90, and 0.99/0.80, respectively. These factors of safety alone may not necessitate shoreline protection. However, when taken in combination with the exposure of the clean sand layer, the Commission senior engineer and geologist agree that the applicants' geotechnical analysis conclusion that each of the three residences are at risk, and that shoreline protection is warranted.

However, one factor in determining whether shoreline protection should be approved is whether the development at risk is entitled to shoreline protection under Section 30235 of the Coastal Act. The home at 235 Pacific Avenue, which is the southernmost of the three subject properties, was constructed prior to enactment of the Coastal Act, and aside from a small addition in 1975, no other major improvements to the property have been undertaken. Thus, the structure is considered "existing" for purposes of requiring protection under Section 30235 of the Coastal Act.

The adjacent home to the north at 241 Pacific Avenue was also constructed prior to enactment of the Coastal Act, although an addition constructed in 1989 resulted in a greater than 50% increase in the size of the home (1,379 sq. ft. to 3,419 sq. ft.). As described in the Commission's 2015 Sea Level Rise Policy Guidance, the Commission interprets the term "existing structures" in Coastal Act Section 30235 as meaning structures that were in existence on January 1, 1977—the effective date of the Coastal Act. The Commission's draft Residential Adaption Policy Guidance Interpretive

Guidelines further suggest that pre-Coastal Act structures that have been altered in such a way that greater than 50% of the structure is replaced or structures that have been increased in size by greater than 50% should be considered new development or redevelopment and not an existing structure pursuant to Section 30235.

However, the City of Solana Beach certified LUP defines blufftop redevelopment as cumulative alterations or additions greater than 50% approved on or after the date of certification of the LUP (2012), not the enactment of the California Coastal Act of 1976. Thus, the residence is considered “existing” for purposes of requiring protection under Section 30235 of the Coastal Act.

The home at 245 Pacific Avenue is the northernmost of the three subject homes. The bluff top residence is not an existing structure for purposes of Section 30235 of the Coastal Act because it was originally permitted and built after 1976, thereby postdating the enactment of California Coastal Act. Furthermore, as identified in Project Description/Site History section of this report, when construction of the home was approved by the Commission, two options were provided to the landowner. The first option was to set the home back 40 feet from the bluff edge in a location that would have a higher likelihood to be safe for 75 years from bluff erosion. The second option was to set the home a minimum of 25 feet back from the bluff edge and waive all rights to construct any upper or lower bluff stabilization devices (other than filling of seacaves) to protect any portion of the residence located within the 40 ft. blufftop setback area, to utilize a foundation design that could be removed in the event of endangerment, and to record a deed restriction acknowledging that the portion of the home located closer than 40 ft. from the bluff edge would be removed if the bluff edge receded to within 10 ft. of the structure and that portion of the home was considered unsafe for occupancy. The landowner chose the second option and sited the home 25 feet back from the bluff edge. Thus, the Commission allowed the landowner to assume the risk of siting the home closer to the bluff edge, as long as the landowner agreed to waive the right to shoreline protection to protect the seaward portion of the home and to remove that portion of the home if it became unsafe for occupancy (Ref: Special Conditions of 6-96-021 in [Exhibit 13](#)) (Ref: CDP #6-96-021/Ratkowski).

The slope stability analysis provided by the applicant shows that the seaward portion of the home at 245 Pacific Avenue is threatened by erosion. The analysis does not indicate that the portion of the home landward of the original 40 ft. bluff setback is currently at risk). Thus, the Commission is not required to approve shoreline armoring to protect the bluff top residence at 245 Pacific Avenue.

Alternatives

The applicants’ geotechnical report and subsequent correspondence include an alternatives analysis to demonstrate that no other feasible less-environmentally-damaging structural alternatives exist to address the threats to the two residential structures at the top of the bluff that are considered pre-coastal “existing structures” entitled to shoreline armoring (235 and 241 Pacific Avenue). Alternatives considered were to:

- Construct of seawall with a reduced height

The applicants have documented that the upper bluff is actively eroding and that the approximately 10 ft. high clean sand lens begins at elevation ~25 ft. MSL. Thus, construction of a seawall that does not encompass the clean sand lens would not provide adequate protection for the threatened blufftop structures.

- Place rock rip-rap alone with no seawall

These structures can be relatively quickly installed and can protect the base of the bluff. However, they also require significant maintenance to ensure they continue to function in the approved state, leading to significant adverse resource impacts each time. Because their foundations are wide, revetments normally occupy a large area of beach. Migrating boulders can also lead to isolated impacts over time, expand the loss of beach area and cumulatively can lead to larger impacts. In addition, a revetment would only protect the lower bluff from wave action and would do nothing to encapsulate the clean sand lens or address the potential for a landslide. In addition, a revetment would not provide adequate support for the lower portion of the bluff and the homes would still be threatened. Thus, a rip rap revetment would not reduce impacts to coastal resources or resolve the threat to the subject homes.

- Underpinning the western edge of the blufftop homes

Another alternative involves underpinning of the existing homes. This alternative would consist of installing drilled piers below or just seaward of the western walls of the structures. Underpinning would not stop the upper or lower bluff from continuing to erode and would result in significant adverse visual impacts as the piers became exposed. As described previously, a below-grade caisson and grade beam system was previously installed seaward of the home at 241 Pacific. Bluff erosion has exposed a portion of the piers at 241 Pacific Avenue. Additionally, the applicants contend that if piers were installed, the collapse on the site triggered by the erosion of the clean sand would continue to grow laterally, undermining the upper bluffs and eventually destabilizing adjacent bluff-top structures.

- Improved drainage and landscaping

Improved drainage and landscaping atop the bluffs is another option that is typically considered. Appropriate drainage measures coupled with planting long-rooted native bluff species can help to stabilize some bluffs and extend the useful life of setbacks. Thus, Special Condition 1 requires that all runoff from impervious surfaces on the bluff be collected and drain towards the street, so that any drainage over the bluff face will be minimized and not adversely impact bluff stability. However, these measures alone will not address the entire identified threat to the existing bluff top structures.

- Modification or Relocation of the Existing Structures to Avoid Construction of a Seawall or Mid and Upper Bluff Geogrid Structure

Relocation is another alternative that is typically considered a reasonable and feasible alternative to consider. The Commission typically requires that new homes be sited landward of the Geologic Setback Line (GSL) on bluff top sites, which consists of the combination of the current 1.5 Factor of Safety (FOS) setback and 75 years of expected erosion. On the subject sites, it would not be feasible to construct homes landward of the GSL, as the identified 1.5 FOS Setback alone is located ~10 ft. from the eastern property line at 241 Pacific Avenue and ~25-35 ft. from the eastern property line at 235 Pacific Avenue.

- Modification or Relocation of the Existing Structures with Caisson Foundations to Avoid Construction of a Mid and Upper Bluff Geogrid Structure

The LUP policies, as currently certified, require that once a property is protected by a lower seawall, if the existing principal structure on the bluff is determined to still be at risk in the future, the first and preferred means of stabilizing an existing home, must be to remove or relocate the threatened portions of the home and to install caissons underneath the structure no closer than 40 feet from the bluff edge.

The applicants assert that if the home at 235 Pacific Avenue were to be reconstructed further landward on the site, the bluff would continue to fail, which would threaten the existing pre-Coastal Act home and the permitted seawall adjacent to the south.

As a part of the Commission's 2008 approval of the below-grade caisson system for the home at 241 Pacific Avenue, a Special Condition was included that requires that if in the future the permittee seeks a coastal development permit to construct additional bluff or shoreline protective devices, the permittee will be required to include in the permit application information concerning alternatives to the proposed bluff or shoreline protection that will eliminate impacts to scenic visual resources, recreation and shoreline processes. The Special Condition further requires that the applicant analyze, and implement, if feasible, relocation of all or portions of the principal structure that are threatened by bluff erosion, as an alternative to additional bluff or shoreline protection devices (Ref: Special Condition 3 of CDP 6-07-132/Hawkins).

The applicants' alternatives analysis, dated June 27, 2018, asserts that it would not be feasible to relocate the principal bluff top structure at 241 Pacific Avenue elsewhere on the subject site. The applicants contend that this alternative would be prohibitive because the cost of removing or relocating the home would be infeasible due to the property owner's likely inability to get a loan for the work and the likelihood that the current lender would require partial or full repayment of the existing multi-million dollar loan on the property. Furthermore, the applicant asserts that if the owner of 235 Pacific Avenue is allowed to construct a seawall and geogrid structure and no armoring is permitted seaward of 241 Pacific Avenue, the bluff failure fronting 241 Pacific Avenue would continue to threaten the home at 235 Pacific Avenue and would also threaten any new shoreline armoring.

Lastly, the applicants note that the existing partially exposed below grade retention system seaward of 241 Pacific Avenue is a permitted structure. If the proposed geogrid mid and upper bluff structure is not approved, the property owner is required by the City of Solana Beach to cover the exposed sections of the caissons with colored and textured shotcrete, forming a wall over the exposed areas. In addition to the covering of the exposed sections, the applicants' engineer has identified that once up to approximately 20 ft. in height of the caissons become exposed, it might be necessary to install additional tiebacks to the caisson system (Ref. "Response to 3rd Party Review" by Soil Engineering Construction, Inc. dated April 16, 2008). This would effectively result in the construction of an upper bluff wall, which is not one of the preferred coastal bluff retention designs identified in the certified LUP.

Thus, in this particular case, the applicants have provided sufficient information for the Commission to determine that rebuilding the two existing structures further landward on the site with caisson foundations such that the proposed mid and upper bluff geogrid structure would not be required, would not be the preferred alternative and may result in an even greater visual impact and alteration of the bluff than would result with the proposed geogrid structure.

- Planned or Managed Retreat

Another option often considered is planned or managed retreat. This option has been long debated and discussed more generally and should be considered in the context of a comprehensive vulnerability assessment and LCP update. In this case, the City has not yet completed a fully certified LCP. This concept posits that instead of allowing continued armoring, once the existing structures have been removed then the shoreline is allowed to retreat. Beach formation in this respect is partly assisted by the sand-generating material in the bluffs as they erode, but more importantly there is space for the natural equilibrium between the shoreline and the ocean to establish itself and for beaches to form naturally. Over the longer run, a more comprehensive strategy to address shoreline erosion and the impacts of armoring may be developed (e.g. planned or managed retreat, relocation of structures inland, abandonment of structures, etc.). However, including as discussed above, such options are infeasible at this location at this time. In order for planned retreat to work comprehensively in the future, the removal or modification of hard armoring structures at the project location would occur in conjunction with the removal of other shore-fronting development.

- Seawall and Geogrid Structure fronting 235 and 241 Pacific Avenue Only

A final alternative would be to approve only the seawall and geogrid mid and upper bluff structure to protect 235 and 241 Pacific Avenue, and leave an unarmored 'gap' of natural bluff fronting the home at 245 Pacific Avenue. This approach would arguably be most consistent with the intent of the Commission's 1996 approval, which was clearly intended to preclude the construction of shoreline protection in front of the subject residence. However, while the Commission is not required to approve protection for the home 245 Pacific Avenue, because the home is adjacent to other homes that are at risk

and are entitled to protection, there is no clear way to avoid some form of protection in front of 245 Pacific Avenue. The applicants' engineer submitted an additional slope stability analysis memo that calculated the expected slope stability of the existing bluff top homes directly to the north and south of the home at 245 Pacific Avenue if a 'gap' of unarmored bluff remained seaward of 245 Pacific (Ref: SEC Memo, dated January 3, 2019). The applicants' engineer explained that a gap in the seawall would result in potential flanking of the seawalls, thereby impacting the properties up and down coast of 245 Pacific Avenue (249 and 241). Therefore, the engineer concluded that a continuous wall, rather than two separate walls with a gap in the middle, is necessary to protect adjacent properties on both sides of 245 Pacific Avenue. The geotechnical memo states the following:

"...the factors of safety (FS) against sliding at the northwestern side of 241 Pacific and the southwestern corner of 249 Pacific pose an immediate concern. A bluff failure through the clean sand lens at 245 Pacific will cause a significant adverse impact to the residential structures at 241 & 249 Pacific. The results of our analyses indicate a 1.11 FS at the 241 property and a 1.16 FS at the 249 property. The results of our analyses are attached as Figures 4 & 5. It should be noted that the calculated FS's are conservative since building surcharge loads were not included in our analyses. If building surcharge loads were added, the FS would be even lower than currently documented.

It should also be noted that, absent lower bluff protection at 245 Pacific, 241 Pacific would require a midbluff side wall, extending from the seawall to the top of bluff. However, this would be a very short-term solution, as additional failure of the lower bluff at 245 Pacific would jeopardize, at a minimum, lower portions of a mid bluff side wall. Such damage would also extend to the proposed Geogrid fill at 241 Pacific. If that were allowed to occur, most of the disturbed/failed fill would be required to be removed and replaced. This would be a dangerous undertaking, considering the location adjacent to a public beach, steepness of the slope, extremely difficult access, and the possibility of continued bluff failures at 245 Pacific during the work. Such a failure would also extend to the property at 249, requiring a permit to build a mid-bluff side wall with fill and geogrid to replace failed natural bluff materials. This mid-bluff side wall would also provide only short-term protection if the failing 245 Pacific bluff was left unabated..."

The Commission's senior engineer and geologist have examined the alternative of not constructing any devices seaward of 245 Pacific Avenue and concluded that it may be feasible to avoid constructing a wall at the base of the bluff below 245 Pacific Avenue at this time ([Exhibit 15](#)). However, the scope and scale of the alternative protective structure that would then be necessary to protect 249 Pacific Avenue would have more adverse impacts to coastal resources than the proposed wall. For instance, in order to prevent lateral erosion onto the property to the north, one alternative might be the construction of an east/west directed retaining wall that functions as a return wall to the lower seawall below 249 Pacific Avenue. A similar wall could be installed for the proposed seawall below 241 Pacific Avenue, thus leaving the bluff below 245 Pacific Avenue in its natural state. However, that alternative would likely result in accelerated

erosion of the bluff below 245 Pacific Avenue, which according to the applicants' engineer, would lead to undermining of the east/west perpendicular walls creating a threat to the residences at 249 and 241 Pacific Avenue. Continual monitoring and on-going construction of additional and larger walls, geogrid, etc. would be necessary as erosion continued to occur. Both immediately and in the future, the visual appearance of alternate protection necessary would have significant impacts on the visual resources of the shoreline which could not be adequately mitigated.

For context, the Commission has been faced with the decision on whether to leave a 'gap' of unarmored bluff in Solana Beach for three previous multi-property shoreline armoring requests where one of the homes had either waived their right to shoreline protection or could achieve an adequate level of stability without shoreline armoring. In each of these previous applications, the Commission determined that approval of shoreline armoring fronting the 'gap' property was the least environmentally damaging feasible alternative (Ref: 6-99-100/ Presnell et al., 6-08-073/Cummings & DiNoto, and 6-09-033/ Garber, et al.).

In the absence of a comprehensive plan addressing blufftop development in Solana Beach, over the years the Commission has placed waivers of future shoreline protection on houses on a project-by-project basis whenever new development is proposed. However, given the amount of closely spaced, existing development on the blufftop, even with the waiver in place, the Commission's ability to avoid shoreline protection has been limited. For example, in May 2014, the Commission reviewed an application for construction of a 49-foot long, 35-foot high extension to an existing lower coastal bluff seawall on the beach and bluff fronting 249 Pacific Avenue and partially fronting 245 Pacific Avenue (6-13-0437 Presnell/Graves LLC.) After reviewing the threat to the existing structure at 249 Pacific Avenue (immediately north of 245 Pacific Avenue), the Commission determined that no portion of the proposed wall could be located in front of 245 Pacific Avenue, given that the home at 245 Pacific had agreed to a waiver and the portion of the home located 40 feet from the bluff edge was not imminently threatened by erosion. However, as detailed above, the current threat to the existing structures to the south means that construction of a wall in front of 245 Pacific Avenue could only be avoided with the construction of much larger, more impactful structures. Thus, in this case, allowing a continuous wall is the least environmentally damaging feasible alternative.

- No project alternative

This alternative is not feasible because erosion of the bluff would continue to threaten the subject blufftop structures at 241 and 249 Pacific Avenue and would likely flank the existing permitted shoreline armoring to the north of the subject site which supports existing residential structures and would also flank the shoreline armoring proposed to protect the homes at 235 and 241 Pacific Avenue.

The Commission's geologist and engineer have reviewed the geotechnical information provided by the applicants and concur that the proposed shoreline armoring is necessary to protect the blufftop structures. Following construction of the proposed seawall and

geogrid structure, the applicants' engineer has demonstrated that the factor of safety for the structures will be increased to an adequate level. Thus, substantial evidence has been provided to document that the proposed seawall and geogrid structure are the least environmentally damaging feasible alternative.

Duration of Armoring Approval

While the Commission is required to approve shoreline armoring to provide protection for the subject bluff top structures, the proposed shoreline armoring fronting the subject sites will impede public access to and along the shoreline, impact beaches and related habitats, and visually impair the coastal area. Thus, it is important to limit the life of the shoreline armoring to that of the structures it is required to protect.

Sections 30235 and 30253 require new development on a bluff top lot to be sited and designed so that it does not require the construction of new shoreline armoring or reliance on existing shoreline armoring. However, when the approval of shoreline armoring is not expressly linked to a particular bluff top structure, shoreline armoring can remain long after the structure it was required to protect has been removed, and therefore may encourage the construction of new structures and additions to existing structures in an unsafe location while continuing to adversely affect resources, including sand supply and recreation. Therefore, Special Condition 2 limits the duration of the subject CDP approval to when the bluff top structures requiring protection (235 Pacific and 241 Pacific) are redeveloped (as defined in Special Condition 3), are no longer present (i.e. demolished), or no longer require the shoreline armoring approved under this CDP, whichever occurs first. Approval of this permit requires all of the applicants to apply for a new CDP or amendment to this CDP to remove the shoreline armoring or to modify the terms of its authorization, if either blufftop structure no longer qualifies for protection. Special Condition 3 requires that redevelopment of the blufftop properties on the site shall either be sited and designed to be safe without reliance on shoreline armoring to establish geologic stability or protection from hazards or shall not be permitted.

Special Condition 3 defines redevelopment according the requirements of the LUP, as alterations, including additions, exterior or interior renovations, or demolition that results in a 50 percent or greater alteration of a major structural component (including exterior walls, floor and roof structures) or a 50 percent increase in floor area, cumulatively over time on or after certification of the City's LUP. Furthermore, changes to major structural elements are not additive between individual elements, while alterations to individual major structural elements are cumulative. Thus, if in the future, the applicants proposed to modify 40% of the exterior walls and 30% of the roof structure; this would not be considered redevelopment because it relates to two different major structural components. However, if the applicants were to come back for a subsequent CDP to modify an additional 10% of the exterior walls or an additional 20% of the roof structure, the project would be considered redevelopment because it would result in a cumulative alteration to 50% of a major structural component. Additions are also cumulative over time, such that an initial 25% addition would not be considered redevelopment; but a subsequent 25% addition would result in a cumulative 50% increase in floor area, and

would thus constitute redevelopment.

Even when a residence is not being entirely demolished and rebuilt, improvements that increase the economic life of the structure in a hazardous location are inconsistent with the Coastal Act and the certified LUP and can reduce the incentive to move the structure landward to reduce risk and the need for shoreline protection. Significant improvements that extend the life of a non-conforming structure in its current location must be limited to those that would not result in the need for future shoreline protection to be consistent with Chapter 3 policies, particularly improvements to portions of blufftop structures located seaward of the Geologic Setback Line (GSL).

Neither the City nor the Commission is required to approve bluff top development projects even when the proposed alterations remain below the 50% bluff top redevelopment threshold. This is especially critical when proposed improvements to non-conforming structures would increase the degree of non-conformity. If bluff top properties are allowed to increase the degree of non-conformity of bluff top structures by undertaking substantial improvements seaward of the GLS and thus extending the life of the structures indefinitely, eventually the structures will require shoreline protection. As the coastline of Solana Beach continues to become more fortified and sea levels continue to rise, it will be even more likely that the public beach fronting the bluffs will become inaccessible at all but the lowest tides. Therefore, consistent with certified LUP Polices 4.17 and 4.18, Special Condition 3 also requires that additions and major structural alterations to the blufftop properties on the site shall be sited and designed to be safe without reliance on shoreline armoring to establish geologic stability or protection from hazards, or shall not be permitted..

If the permittees intends to keep any portion of the shoreline structure in place beyond the 20 year mitigation period or in the future the permittees seek a coastal development permit to construct additional bluff or shoreline protective devices, Special Condition 6 requires the applicants to include the submittal of sufficient information for the Commission to consider the need and potential alternatives.

Monitoring and Maintenance

Additional conditions of approval ensure that the applicants and the Commission know when repairs or maintenance are required, by requiring the applicants to monitor the condition of the seawall at three-year intervals. The monitoring will ensure that the applicants and the Commission are aware of any damage to or weathering of the seawall and can determine whether repairs or other actions are necessary to maintain the seawall in its approved state. Special Condition 2 requires the applicants to submit a monitoring report that evaluates the condition and performance of the seawall and overall site stability, and to submit recommendations, if any, for necessary maintenance, repair, changes or modifications to the project. Special Condition 2 also requires that the applicants install monitoring pegs or markers at ten foot intervals along the face of the entire seawall at the same elevation of the Mean High Tide Line (MHTL) and at an elevation of five feet above the MHTL to be used to monitor sand levels and to identify times when the MHTL intersects the face of the seawall. The placement of the monitoring

pegs shall be certified by a licensed surveyor. Special Condition 2 also requires that the applicant provide monitoring reports every five years from the date of CDP issuance that evaluate whether the seawall is still required to protect the bluff top structures it was designed to protect. If it is determined that the seawall is no longer needed to protect the blufftop structures, the applicant must submit a CDP application within six months to remove the seawall. In addition, the condition requires the applicants to perform necessary repairs through the coastal development permit process, when required.

Special Condition 1 requires the applicants to submit a final approved site plan that includes the bluff top structures and square footage of all bluff top structures and property lines for the subject sites. In addition, final plans for the project must indicate that the seawall conforms to the bluff contours. The final plans shall also detail the location of any existing accessory improvements on the site. In addition, all runoff from the subject site shall be directed towards the street. Special Condition 5 requires that, prior to issuance of this CDP, the applicants must submit a copy of any required permits from the California State Lands Commission to ensure that no additional requirements are placed on the applicants that could require an amendment to this permit.

To assure the proposed shoreline armoring has been constructed properly, Special Condition 11 requires that, within 30 days of completion of the project, as built-plans and certification by a registered civil engineer be submitted that verifies the proposed seawall has been constructed in accordance with the approved plans. Special Condition 14 requires that during all construction, copies of the signed coastal development permit and approved construction plan shall be maintained on-site and that a construction coordinator be designated. Special Condition 12 acknowledges that the issuance of this permit does not waive any public rights that may exist on the property.

Deed Restriction and Waiver of Liability

Due to the inherent risk of shoreline development, Special Condition 4 requires the applicants to waive liability and indemnify the Commission against damages that might result from the proposed shoreline devices or their construction. The risks of the proposed development include that the proposed shoreline devices will not protect against damage to the blufftop structures from bluff collapse and erosion. In addition, the structure itself may cause damage either to the blufftop structures or to neighboring properties by increasing erosion of the bluffs. Such damage may also result from wave action that damages the seawall. Although as conditioned, the project minimizes these risks, the risks cannot be eliminated entirely. Given that the applicants have chosen to construct the proposed shoreline device despite these risks, the applicants must assume the risks.

To ensure that future buyers of the subject properties receive notice of the CDP and its various restrictions, Special Condition 14 requires the property owners of 235, 241, and 245 Pacific Avenue to record deed restrictions that incorporate a legal description of each affected parcel and all standard and special conditions required by this CDP.

In summary, given the low factor of safety on the subject bluff, the exposed clean sand lens, and the close proximity of the existing structures to the bluff edge, the Commission

finds that the existing primary blufftop structures are in danger from erosion and that the proposed seawall and geogrid structure is necessary to protect the existing bluff top structures (which were originally constructed prior to the Coastal Act's enactment, 235 and 241 Pacific Avenue). Since the proposed seawall will deplete sand supply, occupy public beach and bluff and fix the back of the beach, Special Condition 7 requires the applicants to make a payment to offset this impact. The proposed project is the least environmentally damaging feasible alternative, with no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment. Therefore, the Commission finds that the proposed shoreline armoring, as conditioned, is consistent with Sections 30235 and 30253 of the Coastal Act.

C. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30604(c) requires that every coastal development permit issued for any development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of [Coastal Act] Chapter 3." The proposed project is located seaward of the first through public road (Pacific Avenue). Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. In particular:

30210. 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.

30211. Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

30212. Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects

30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.

Coastal Act Section 30240(b) also protects parks and recreation areas, such as the adjacent beach area. Section 30240(b) states:

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

Section 30235 of the Coastal Act states, in part:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

The City's LUP policies related to public access state:

Policy 4.50: *The bluff property owner shall pay for the cost of the coastal structure or Infill and pay a Sand Mitigation Fee and a Public Recreation Fee per LUP Policy 4.38. These mitigation fees are not intended to be duplicative with fees assessed by other agencies. It is anticipated the fees assessed as required by this LCP will be in conjunction with, and not duplicative of, the mitigation fees typically assessed by the CCC and the CSLC for impacts to coastal resources from shoreline protective devices.*

Sand Mitigation Fee - to mitigate for actual loss of beach quality sand which would otherwise have been deposited on the beach. For all development involving the construction of a bluff retention device, a Sand Mitigation Fee shall be collected by the City which shall be used for beach sand replenishment and/or retention purposes. The mitigation fee shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing sand to replace the sand that would be lost due to the impacts of any proposed protective structure. The methodology used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix A. The funds shall solely be used to implement projects which provide sand to the City's beaches, not to fund other public operations, maintenance, or planning studies.

Sand Mitigation Fees must be expended for sand replenishment and potentially for retention projects as a first priority and may be expended for public access and public recreation improvements as secondary priorities where an analysis done by the City determines that there are no near-term, priority sand replenishment Capital Improvement Projects (CIP) identified by the City where the money could be allocated. The Sand Mitigation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

Public Recreation Fee – The City and the CCC have developed a method for calculating a Public Recreation Fee for the City of Solana Beach. To mitigate for

impacts to public access and recreation resulting from loss of beach area, for all development involving construction of a bluff retention device, a Public Access and Recreation Fee shall be collected by the City which shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing beach area to replace the public access and coastal recreation benefits that would be lost due to the impacts of any proposed protective structure. The method used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix C. The funds shall solely be used to implement projects which augment and enhance public access and coastal recreation along the shoreline, not to fund other public operations, maintenance or planning studies.

Project applicants have the option of proposing a public recreation/access project in lieu of payment of Public Recreation Fees to the City. At the City's discretion, these projects may be accepted if it can be demonstrated that they would provide a directly-related recreation and/or access benefit to the general public.

Public Recreation Fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment and retention as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access CIP identified by the City where the money could be allocated. The Public Recreation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

Section 30235 of the Coastal Act requires that shoreline protection be designed to eliminate or mitigate adverse impacts on local shoreline sand supply. An issue of major concern facing California today is the fast pace of disappearing beaches due to natural processes (i.e. erosion, subsidence and storm events) and anthropogenic factors (coastal development and sand supply interruptions). Seawalls, revetments, and other types of hard armoring have long been used to protect backshore development from erosion and flooding, but future accelerated sea level rise and extreme storm events will heighten the rate of beach loss and potential exposure of the backshore to hazards. Hard armoring already results in unintended ecological and public access consequences, such as loss of biodiversity and ecosystem services and displacement of recreational beach area with protective structures.

Some of the effects of a shoreline protective structure on the beach, such as scour, end effects and modification to the beach profile are temporary or difficult to distinguish from all the other actions that modify the shoreline. Seawalls also have non-quantifiable effects on the character of the shoreline and visual quality. However, some of the effects which a structure may have on natural shoreline processes can be quantified. Three of the effects from a shoreline protective device which can be quantified are: 1) loss of the beach/bluff area on which the structure is located; 2) the long-term loss of beach/bluff which will result when the back beach/bluff location is fixed on an eroding shoreline; and 3) the amount of material that would have been supplied to the beach if the back beach or bluff were to erode naturally.

Loss of beach material and loss of beach area are two separate concerns. A beach is the result of both sandy material and a physical area between the water and the back beach. Thus, beach area is not simply a factor of the quantity of sandy beach material.

In recent years the Commission has calculated and required separate mitigation for both the direct losses of beach area and the losses of beach sand. The Commission's mitigation approach for sand loss has been relatively straightforward. The sand mitigation fee quantifies lost sand volume and the cost of the replacement sand. The proposed seawall will halt or slow the retreat of the entire bluff face. The bluff consists of a significant amount of compacted sand. As the bluff retreated historically, this sand was contributed to the littoral sand supply to nourish beaches throughout the region. The proposed seawall will halt this contribution to the littoral cell. Based on bluff geometry and the composition of the bluff materials, the applicants estimated that the seawall will prevent approximately 2,170 cubic yards of sand from reaching the littoral cell (based on a bluff erosion rate of 0.4 ft. /yr. and an initial 20 year mitigation period). At estimated sand cost of \$13.67 per cubic yard (provided by the applicant, and based on three estimates from local contractors); this sand would have a value of \$29,669 ([Exhibit 8](#)).

This loss of beach area has impacts on public access and recreation. The project site is located on a public beach that is utilized by local residents and visitors for a variety of recreational activities, such as swimming, jogging, walking, surf fishing, beachcombing and sunbathing. The site is located just north of the Fletcher Cove Beach Park. The beach fronting the subject site is narrow, and at high tides throughout the year it is inundated with water and inaccessible. The proposed seawall will be constructed on the public beach that would otherwise be available for public use and, therefore, will have both immediate and long-term adverse impacts on public access and recreational opportunities.

Public Trust

In addition to the Coastal Act policies that support public access and equal opportunities for recreation, the Commission has the responsibility to protect the public trust and public trust uses.¹ Coastal Act regulations² define public trust lands as “all lands subject” to the common law public trust and associated with trust purposes, including recreation. In the common law, the doctrine traditionally protects in-water uses such as fishing and navigation, but has been extended to protect the environment (*Marks v. Whitney* (1971) 6 Cal.3d 251, 259-260), and associated resources that affect trust lands, such as non-navigable tributaries supplying water to a lake (*Nat'l Audubon Soc. v. Super. Ct.* (1983) 33 Cal. 419, 436-437). In some jurisdictions, the doctrine explicitly protects “dry sand”

¹ The State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds and manages these lands for the benefit of all people of the State for statewide purposes consistent with the common law Public Trust Doctrine (“public trust”). In coastal areas, the landward location and extent of the State's sovereign fee ownership of these public trust lands are generally defined by reference to the ordinary high water mark (Civil Code, §670), as measured by the mean high tide line (*Borax Consol. v. City of Los Angeles* (1935) 296 U.S. 10); these boundaries remain ambulatory, except where there has been fill or artificial accretion.

² Cal. Code of Regs., title 14, § 13577(f).

recreation adjacent to public trust lands (*Matthews v. Bay Head Improvement Assn.* (1984) 95 N.J. 306, 331-332), on the rationale that “reasonable enjoyment” of the shore and sea cannot be realized without some use of the dry sand area (*id.* at p. 325).³ California recognizes access as a component of public trust resources. A July 2017 report by the Stanford Center for Ocean Solutions explains that agencies “may not undertake or authorize uses of uplands without appropriate safeguards for nearby public trust resources and uses.”⁴ The State Lands Commission, which administers leases on public trust lands, analyzes the entire area of public trust impacts, including impacts on upland recreation.⁵ Thus, use of dry land adjacent to the public trust may not interfere with recreation and other public trust uses.

The concern is complicated by the effects of sea level rise. As sea levels rise, and beaches and bluffs migrate inland, maintaining residential development adjacent to the shoreline will in many cases cause the narrowing and eventual loss of beaches, dunes and other shoreline habitats as well as the loss of offshore recreational areas. This narrowing, often referred to as the “coastal squeeze,” can occur when shoreline protection or other fixed development prevents the landward migration of the beach that would have otherwise occurred.

As discussed above, the proposed seawall will take up the public beach, and as a result will impact the ability of the public to recreate on the beach, interfering with public trust uses. A tourist website⁶ describes nearby Fletcher Cove Beach as Solana Beach’s “main” central beach, nicknamed Pillbox for the historic gunnery installations on the bluff. Activities include surfing, bodyboarding, fishing, swimming, kayaking, and whale watching. The beach has stayed wide enough so far that when the tide is up, passive recreation is still available, including the ability to walk to Tide Beach Park to the north and Del Mar North Beach to the south. Tide Beach Park⁷ similarly offers swimming, surfing, and bodyboarding, along with scuba diving, tide pooling, and fishing. At high tide during various points in the year, however, the beach is confined to a cove below the bluffs.

In addition to the loss of recreation and cramping of access, hard armoring can also result in nuisance conditions for neighbors who suffer increased flooding or erosion as a result of nearby seawalls. Other detrimental impacts may include negative visual impacts and interference with ecosystem functions. The effectiveness of hard armoring to protect development will also be reduced as sea level rises and storm intensity and frequencies

³ In a 2005, the same court affirmed *Matthews* and described access over uplands as “integral to the public trust doctrine.” (*Raleigh Ave. Beach Assn. v. Atlantis Beach Club, Inc.* (2005) 185 N.J. 40, 53.)

⁴ Center for Ocean Solutions, Stanford Woods Institute for the Environment, *The Public Trust Doctrine: A Guiding Principle for Governing California’s Coast Under Climate Change* (2017), p. 5.

⁵ See e.g., Section 3.2.4, *Public Trust Impact Analysis, Broad Beach Restoration Project Revised Analysis of Impacts to Public Trust Resources and Values*, July 2014, including discussion of long-term impacts on recreational use at pp. 3.2-23 to 26. Available at

http://www.slc.ca.gov/Info/Reports/Broad_Beach/3.2_Recreation.pdf.

⁶ See <https://www.californiabeaches.com/beach/fletcher-cove-beach/>.

⁷ See <https://www.californiabeaches.com/beach/tide-beach-park/>.

increase. Relatedly, shoreline armoring costs will increase over time as coastal hazards and storms cause elevated levels of damage and increasing need for repair and maintenance.

Appropriate mitigation for the subject development would be creation of additional public beach area in close proximity to the impacted beach area. However, all of the beach areas in Solana Beach are already in public ownership, such that there is not private beach area available for purchase. Therefore, on November 28, 2018, the Commission certified an in-lieu fee method to quantify and then mitigate for recreational losses due to encroachment by a seawall and then long-term beach loss due to fixing the back of the beach in the city of Solana Beach (Ref: LCP-6-SOL-16-0020-1). The City previously had an interim program in place that required applicants proposing shoreline armoring to make a \$1,000/linear ft. deposit for shoreline armoring until such time that the aforementioned Public Recreation Fee method was finalized. The Commission has accepted the City of Solana Beach's interim mitigation program for numerous seawall projects (Ref. CDP Nos. 6-02-039-A1/Seascape Chateau, 6-07-134/Brehmer, Matchinske, & Caccavo, 6-03-33-A5/Surfsong, 6-08-73/Cummings & DiNoto, et. al., 6-08-122/Winkler, 6-09-033/Garber et. al., 6-13-025/Koman et al., 6-13-0437/Presnell & Graves, 6-13-0948/Bannasch, and 6-16-0281/Winkler & Lucker). Each of these recent coastal development permits for seawalls were also conditioned to require the applicants to apply for an amendment to their coastal development permit within six months of the Commission's certification of the City's economic study in order to reassess the in-lieu mitigation fee.

The Public Recreation Fee method is included in the City's certified Land Use Plan (LUP). LUP Policy 4.50 requires applicants to pay a mitigation fee for public access and recreation impacts caused by bluff retention devices, consistent with the mitigation method detailed in Appendix C of the LUP ([Exhibit 14](#)). Appendix C summarizes the proposed public recreation mitigation method, and includes a fee schedule to determine the required Public Recreation Fee to mitigate for impacts to public beach access and recreation that are expected to result from the construction of a coastal structure or non-erodible seacave/notch infill over a 20 year mitigation period.

The City's public recreation mitigation method was derived using certain economic concepts that primarily depend on 1) choice of a proxy, or 'stand-in', for recreational value of the beach per visitor per day (also called the beach day use value), 2) estimated numbers of beach visitors annually, and 3) the area of beach impacted by shoreline armoring. The day use value was estimated using surveys that assessed the amount of time visitors spent traveling to get to and from the beach and the estimated cost of travel (including time value based on income). The seasonal beach day use value per person per day for Solana Beach is \$35.56 (2016 dollars) in the summer and \$21.00 (2016 dollars) in the winter. This number was then multiplied by the estimated total number of adult visitors to the beach per year to derive the annual recreational value of the entire beach. The value of the City's Junior Lifeguard Program was then added to obtain the total estimated beach recreation value. Thus, the key variables that are used to calculate the Solana Beach annual recreational value are day use value and attendance:

$$\text{Annual Recreational Value (\$/yr)} = \text{Day Use Value (\$/person)} \times \text{attendance (people/yr)} + \text{Jr. Lifeguard Program (\$)}$$

Because the Public Recreation Fee method uses annual recreation value to determine the loss in recreational value associated with loss of beach area, another key variable for the Public Recreation Fee calculations is the size of the beach. Thus, the method divides its proxy for the annual recreational value by the size of the beach to get a dollar value per square foot of beach area. This metric allows valuation per square foot of beach lost due to a coastal structure or non-erodible seacave/notch infill.

$$\text{Annual Recreational Value per sq ft (\$/yr per sq ft)} = \text{Annual Recreational Value (\$/yr)} / \text{Area of Solana Beach (sq ft)}$$

The Public Recreation Fee is then applied in roughly the same manner as the Commission has done in the past, in that the mitigation calculation is based on the direct encroachment by the bluff retention device (Encroachment loss) and beach area that would have formed due to passive erosion over a 20 year mitigation period (Passive erosion loss). The City’s Public Recreation Fee method also requires that the area of existing notches or seacaves located landward of a proposed seawall be included as a part of the encroachment area.

$$\text{Public Recreation Fee (\$/20 years)} = \text{Encroachment loss (\$)} + \text{Passive erosion loss (\$)}$$

Appendix C of the LUP includes the following public recreation impact mitigation fee schedule:

Table 1 - Public Recreation Impact Mitigation Fee Schedule		
Permit Year	Initial Area Rate (Per SF)	Bluff Retreat Rate (Per LF)
2016	\$121	\$600
2017	\$124	\$630
2018	\$126	\$662
2019	\$129	\$698
2020	\$131	\$737
2021	\$134	\$780
2022	\$136	\$825
2023	\$139	\$874
2024	\$142	\$926
2025	\$145	\$982
2026	\$148	\$1,044

The Initial Area Rate in Table 1 represents the use value of one sq. ft. of beach area over a 20-year period and this use value is multiplied by the total area of encroachment of a Bluff Retention Device (Initial Area) to determine the fee. The use value is increased

6-18-0288 (DeSimone, Schragger, & Jokipii)

each year to reflect an estimated 2% Consumer Price Index (CPI). The use value is also subject to a 2% Present Value (PV), which offsets the CPI over the 20 year mitigation period.

The Bluff Retreat Rate (Per Linear Ft.) in Table 1 is equal to one linear ft. (Bluff Retreat Length) multiplied by 20 years of estimated erosion multiplied by the use value of one sq. ft. of beach. It represents the use value of the expected beach area that would otherwise be available for public use through passive erosion if the Bluff Retention Device was not constructed. An erosion rate of 0.4 ft. per year is assumed between 2016 and 2025 and an erosion rate of 0.673 is assumed between the years 2026 and 2046. The use value increases each year to reflect an estimated 2% CPI.

The length of the proposed seawall is 150 feet and the width of the proposed seawall is 2.33 feet. As identified in the table above, for permit year 2019, the Initial Area Rate is \$129/sq. ft. and the Bluff Retreat Rate is \$698/sq. ft. The following calculations are used to determine the Public Recreation Fee for the proposed seawall:

$$\begin{aligned} \text{Initial Area (Seawall)} &= 150 \text{ ft.} \times 2.3 \text{ ft.} = 349.5 \text{ sq. ft.} \\ \text{Initial Area Rate} &= 349.5 \text{ sq. ft.} \times \$129 = \$45,086 \\ \text{Bluff Retreat Rate} &= 150 \text{ ft.} \times \$698 = \$104,700 \\ \text{Public Recreation Fee} &= \$45,086 + \$104,700 = \$149,786 \end{aligned}$$

In this case, a previous property owner at 241 Pacific Avenue already paid \$22,000 into the City's interim mitigation program pursuant to the City's approval of the caisson and grade beam upper bluff retention system (Ref: City of Solana Beach CUP 17-07-15). The City determined that the 50 ft. long retention system and the two eight ft. lateral returns were subject to the \$1,000 per linear ft. mitigation deposit, resulting in a total assessed mitigation deposit of \$66,000. However, the City only required that 1/3 of the deposit be paid at the time of permit issuance and conditioned that the remainder of the fee would be paid annually until the year 2081. The property owner made the initial payment of \$22,000, but did not make any of the subsequent annual payments. The amount paid into the interim fee program can be deducted from the total calculated Public Recreation Fee (\$149,786 - \$22,000) for a total fee of \$127,786 ([Exhibit 9](#)).

Special Condition 7 requires the applicants to provide evidence, in a form and content acceptable to the Executive Director, that a fee of \$127,786 has been deposited in a Shoreline Account established by the City of Solana Beach, in-lieu of providing new beach area to replace the beach area that will be lost due to the impacts of the seawall for the an initial 20 year period beginning on the building permit completion certification date. All interest earned by the account shall be payable to the account for the purposes stated below.

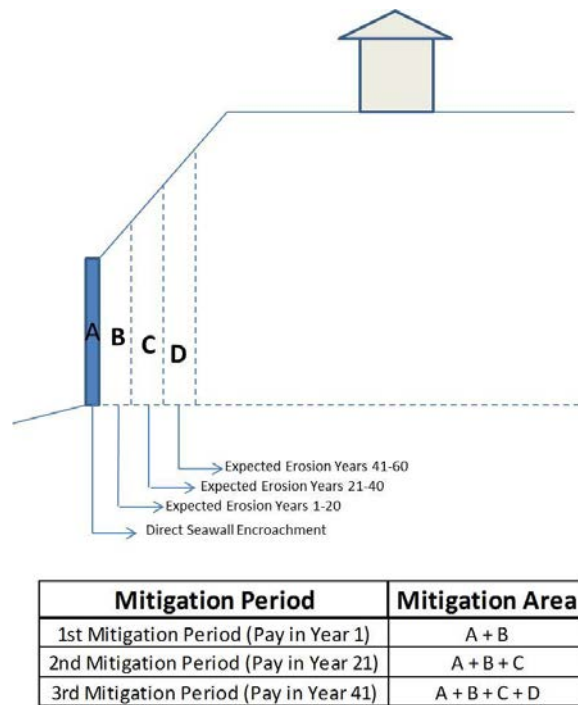
The City's Public Recreation Fee program would typically require that the fee for any seacave or notch at the base of the bluff also be paid prior to issuance of the Coastal Development Permit. However, in this case, the sand level is too high to safely investigate the extent of any seacave or notch at the site, without the use of mechanized

digging equipment. Therefore, Special Condition 7 also requires that within 30 days of the start of construction, the applicants submit documentation of the area of any notch or seacave at the base of the bluff (i.e., the depth and width between the rear of the notch or seacave and the bluff drip line) to the Commission and to the City and submit an additional an additional in-lieu Public Access Fee to the City for the area based on the City’s Public Access Fee method.

Public Recreation Fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment and retention as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access Capital Improvement Projects (CIP) identified by the City where the money could be allocated. The Public Recreation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

Prior to the completion of the initial 20 year period, the applicant is required to submit an amendment application to the Commission to either remove or modify the permitted shoreline armoring or to provide a geotechnical reports with evidence that the shoreline armoring must be retained and to provide mitigation for the subsequent 20 year period. As shown in Figure 1 (which is part included in Appendix C of the LUP), in subsequent mitigation periods, mitigation shall include the direct shoreline protection device encroachment and all beach area that would have otherwise been available to the public through passive erosion had the shoreline armoring not been constructed.

Figure 1



Additionally, the proposed project directly encroaches on public property. Special Condition 10 requires that, prior to commencement of construction; the applicants must execute an Encroachment Agreement approved by the City (consistent with Policy 4.48 of the City's approved LUP). Pursuant to the encroachment agreement, the applicant shall recognize that the proposed seawall is located on City property and that the City may require that the seawall be removed at any time. If the City requires removal, the permittees shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety, and may only remove the encroachment after the Commission issues the CDP amendment.

The use of the beach or public parking areas for staging of construction materials and equipment can also impact the public's ability to gain access to the beach. Special Condition 8 requires that the applicants submit a construction staging and material storage plan for the subject development. Special Condition 8 prohibits the applicants from storing vehicles on the beach overnight, using any public parking spaces at the Fletcher Cove Parking Lot overnight for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach or in the parking lot. The special condition also prohibits construction on the sandy beach during weekends and holidays and between Memorial Day to Labor Day of any year.

In summary, while the proposed shoreline construction will reduce available public beach area and sand supply, the project has been designed and conditioned to minimize these impacts to the public beach. Therefore, as conditioned, the proposed development can be found to be consistent with the public access and recreation policies and Section 30235 of the Coastal Act and the City's certified LUP.

D. ENVIRONMENTALLY SENSITIVE HABITAT/WATER QUALITY

The following Chapter 3 policies of the Coastal Act are most applicable to this development:

Section 30230 of the Coastal Act states:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the 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 30240 of the Coastal Act states:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

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

The following policies of the City of Solana Beach certified Land Use Plan protect environmentally sensitive habitats:

Policy 3.8: *ESHA shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.*

Policy 3.22: *Development adjacent to ESHAs shall minimize impacts to habitat values or sensitive species to the maximum extent feasible...*

The following policies of the City of Solana Beach certified Land Use Plan protect coastal water quality:

Policy 3.84: *New development shall not result in the degradation of the water quality of groundwater basins or coastal surface waters including the ocean, coastal streams, or wetlands. Urban runoff pollutants shall not be discharged or deposited such that they adversely impact groundwater, the ocean, coastal streams, or wetlands, consistent with the requirements of the RWQCB's municipal stormwater permit and the California Ocean Plan.*

Policy 3.85: *Development must be designed to avoid or minimize to the maximum extent feasible, the introduction of pollutants of concern into coastal waters. To meet the requirement to minimize "pollutants of concern," new development shall incorporate a BMP or a combination of BMPs best suited to reduce pollutant loading to the maximum extent feasible.*

A negligible amount of native flora currently exists on the face of the bluff where the seawall and geogrid structure are proposed to be installed. However, the wall will be located on the sandy beach. Sandy beach ecosystems are unique--their intrinsic biota and ecological functions are not provided by any other coastal ecosystem. Sandy beaches are comprised of three different biological zones: the supra-littoral zone, the mid-littoral zone, and the surf zone, each of which provides critical habitat, food and/or breeding grounds for many species. These zones provide functions that include buffering and absorption of wave energy by stored sand, filtration of large volumes of seawater, extensive detrital and wrack processing and nutrient recycling, and the provision of critical habitat and resources for declining and endangered wildlife, such as shorebirds and pinnipeds.

The effects of shoreline armoring on sandy beach ecosystems are increasingly recognized, though difficult to quantify. Armoring directly encroaches upon the beach and fixes shoreline position, constraining the possible responses and evolution of beach ecosystems to adjust to changes in sea level and other dynamic coastal processes. This

loss of the scope and ability of beaches to respond to coastal processes results in the reduction of overall width and the elimination of habitat zones and the space needed by biota to adjust to changing swell, tide and beach conditions. As pressure to develop the coast continues, and sea level rise and coastal erosion accelerates, the need to understand the ecological consequences of armoring on coastal ecosystems is increasingly urgent.

Quantitatively assessing effects of armoring on ecological components and functions potentially altered or lost on a given stretch of sandy beach is complex. One option for mitigating ecological impacts of coastal armoring is to use the cost of restoring suitable natural habitat, either at that site or nearby as a proxy for ecological value. A fundamental assumption to the replacement cost method is that the restored ecosystem function is equivalent to the natural function lost and is the least costly way to regain that natural function.^{8,9} The replacement cost approach relies on determining proportional and appropriate ecological restoration for identifying equitable mitigation and thus requires a robust set of suitable restoration projects to draw upon for valuation.

However, a replacement cost approach is only one alternative to delving into the array of methods for identifying, replicating, and monitoring lost ecological components of a specific stretch of beach and still requires further study before a mitigation methodology can be devised and implicated. Thus, the Commission finds that the full ecological impacts of shoreline armoring on beach habitat may not be fully identified, or mitigated at this time. Research continues and staff anticipates this issue will be resolved in the future. The Commission finds that it is not feasible at this time mitigate for the loss of the biological productivity of a given stretch of beach.

Special Condition 8 requires that during the construction of the project, the permittee may not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. Additionally, to further assure that the subject development will not result in the pollution of the ocean waters, Special Condition 9 requires the applicants to submit a Best Management Practices Plan that incorporates structural and nonstructural Best Management Practices (BMPs), for Executive Director approval, for the construction of the proposed seawall. Construction methods must be devised to assure that shotcrete material does not mix with or pollute ocean waters. With appropriate BMPs, the potential for this polluted material from the site making its way into the ocean will be eliminated. Therefore, as conditioned, the Commission finds the proposed development consistent with the marine and water quality protection policies of the Coastal Act.

As conditioned, the Commission finds that the proposed project, as conditioned, will ensure that all environmental impacts will be minimized to the maximum extent feasible.

⁸ US National Research Council. 2005. *Valuing Ecosystem Services: Toward Better Environmental Decision-Making*. The National Academies Press. Washington, DC.
<http://www.nap.edu/catalog/11139.html>

⁹ Bockstael, N.E., A.M. Freeman, R.J. Kopp, *et al.* 2000. On measuring economic values for nature. *Environ. Sci. Technol.* 34: 1384–1389.

Therefore, the proposed project can be found consistent with resource protection policies of the Coastal Act and the City's certified LUP.

E. VISUAL RESOURCES/ALTERATION OF NATURAL LANDFORMS

Sections 30240, 30250 and 30251 of the Coastal Act require that the scenic and visual qualities of coastal areas be protected, that new development adjacent to park and recreation areas be sited so as to not degrade or impact the areas and that new development not significantly adversely affect coastal resources:

Section 30240

[. . .]

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

Section 30251

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

In addition, the following certified City of Solana Beach LUP language, although not the standard of review, provides pertinent information and guidance regarding the protection of coastal zone visual resources:

Policy 4.29: *Limit buildings and structures on the sloped face and toe of the bluff to lifeguard towers, subsurface public utility drainage pipes or lines, bluff retention devices, public stairs and related public infrastructure which satisfy the criteria established in the LCP. No other permanent structures shall be permitted on a bluff face. Such structures shall be maintained so that they do not contribute to further erosion of the bluff face and are to be visually compatible with the surrounding area to the maximum extent feasible.*

Policy 4.37: *Maximize the natural, aesthetic appeal and scenic beauty of the beaches and bluffs by avoiding and minimizing the size of bluff retention devices, preserving the maximum amount of unaltered or natural bluff face, and minimizing encroachment of the bluff retention device on the beach, to the extent feasible, while ensuring that any such bluff retention device accomplishes*

its intended purpose of protecting existing principal structures in danger from erosion.

Policy 4.55: *To achieve a well maintained, aesthetically pleasing, and safer shoreline, coordination among property owners regarding maintenance and repair of all bluff retention devices is strongly encouraged. This may also result in cost savings through the realization of economies of scale to achieve these goals by coordination through an assessing entity. All bluff retention devices existing as of the date of certification of the LCP, to the extent they do not conform to the requirements of the LCP, shall be deemed non-conforming. A bluff property owner may elect to conform his/her/its bluff property or bluff retention device to the LCP at any time if the City finds that an existing bluff retention device that is required to protect existing principal structures in danger from erosion is structurally unsound, is unsafe, or is materially jeopardizing contiguous private or public principal structures for which there is no other adequate and feasible solution, then the City may require reconstruction of the bluff retention device.*

Much of the bluff along the Solana Beach coastline has been armored at its base, primarily by seawalls, all of which substantially alter the appearance of the bluffs, particularly those that have not been camouflaged to replicate the of a natural bluff face. However, the technology in design of seawalls has improved dramatically over the last two decades. Seawalls now typically involve sculpted and colored concrete that upon completion closely mimic the natural surface of the lower bluff face. As proposed, the seawall will match the appearance of the adjacent walls to the north and south, which were designed to conform as closely as possible to the natural contours of the bluff using color and textured concrete. The visual treatment proposed is similar to the visual treatment approved by the Commission in recent years for shoreline devices along the Solana Beach shoreline.

Although much of the Solana Beach shoreline does contain seawalls at the base of the bluff, the natural, largely unaltered, face of the bluff that extends along the approximately 1 ½ mile long shoreline in Solana Beach provides an important visual amenity to residents and coastal visitors alike. The Commission has previously approved several geogrid structures along the Solana Beach shoreline. However, the results of the majority of the installed geogrid structures are “...near-barren, featureless slopes which have little in common with the visual appearance of pre-failure coastal bluffs.” (Ref. Letter from Soil Engineering Construction, Inc., dated October 14, 2009). In the Commission’s most recent geogrid structure approval in Solana Beach, at 341-355 Pacific Avenue, it required that the geogrid reinforced slope reconstruction be constructed to mimic the natural undulating bluff landforms in the vicinity to the maximum extent feasible. Although, the reconstructed slope at this site still pales in comparison to an unaltered bluff face, it resulted in a more natural appearance than previous geogrid bluff structures. Therefore, Special Condition 1 requires that revised plans be submitted such that the geogrid structure will be constructed to include variable thicknesses to provide visual undulations that mimic the nearby natural bluff conditions. At a minimum, the geogrid structure shall include 5 non-evenly spaced, tapered, undulating drainage features, with non-linear

edges, that are approximately 2 feet deep and approximately 5 feet wide. The applicant has also proposed to install hydroseed and container plantings on the proposed geogrid structure.

The existing failing gunite on the bluff face fronting 235 Pacific Avenue adversely impacts the visual quality of the bluff and may also pose a safety risk for beach goers as large pieces of concrete continue to break off in the future ([Exhibit 12](#)). However, the applicants are only proposing to remove approximately 1/3 of the existing gunite, limited to the portions that have already broken off and are isolated on the bluff face. In relation to the need to retain the majority of the existing gunite, the applicants' representative states:

“...Retention of the undamaged upper portion of gunite has been recommended to avoid upper bluff erosion due to wind and rain, but it serves no useful purpose in protecting the residential structure from ongoing failure of the coastal bluff.” (The Trettin Company, October 27, 2017 memo).

The applicants' representative further asserts that they believe the unbroken section of gunite near the top of the bluff provides better protection against future top of bluff erosion than would exist if the gunite were removed. In addition, the representative further contends that the gunite may be covering some form of bonded/grouted material used to fill a void in the bluff and that removal of the gunite may destabilize this material. However, the applicants have not provided any evidence to support the argument that removal of the entirety of the gunite would destabilize the bluff. The Commission's senior coastal engineer and geologist believe that the gunite likely can be safely removed, and this would be visually preferable to retention of the gunite, even as colored. Therefore, Special Condition 1 requires that the applicants remove the entirety of the existing gunite on the bluff face fronting 235 Pacific Avenue and requires that a licensed civil or geotechnical engineer shall be onsite at all times that the gunite is being removed. If during removal, the onsite engineer identifies any safety or bluff stability concerns, the Executive Director of the Commission may allow for retention of some of the gunite without returning to the Commission for an amendment to this permit. If any gunite is retained, it shall be colored to match the adjacent natural bluff.

In addition, Special Condition 2 requires the applicant to monitor and maintain the proposed shoreline armoring in its approved state. Thus, the proposed seawall and geogrid structure will be maintained so as to effectively mitigate its visual prominence.

Therefore, as conditioned, the Commission finds that potential visual impacts associated with the proposed development have been reduced to the maximum extent feasible and the proposed development will include measures to prevent impacts that would significantly degrade the adjacent park and recreation area. Thus, the project is consistent with Sections 30240 and 30251 of the Coastal Act and the City's certified LUP.

F. LOCAL COASTAL PLANNING

Section 30604(a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made.

The City's Local Coastal Program Land Use Plan was effectively certified in June 2013. However, the City has not yet developed implementing ordinances; thus, a complete LCP has not yet been certified.

The location of the proposed shoreline armoring is designated for Open Space Recreation in the City of Solana Beach LUP and General Plan. As conditioned, the subject development is consistent with these requirements. Site-specific geotechnical evidence has been submitted indicating that the existing principal structures at the top of the bluff are in danger. Based on the above findings, the proposed development is consistent with the Chapter 3 policies of the Coastal Act in that the need for the shoreline protective devices has been documented and its adverse impacts on coastal resources will be mitigated.

Thus, the Commission finds the proposed development, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act, and will not prejudice the ability of the City of Solana Beach to complete a certifiable local coastal program. These issues of shoreline planning will need to continue to be addressed in a comprehensive manner in the future through the City's LCP certification process

G. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of 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 that the activity may have on the environment.

The City of Solana Beach found that the proposed development was exempt pursuant to CEQA Guidelines sections 15269(b)(c) [prevention of emergencies]. The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The preceding coastal development permit findings in this staff report have discussed the relevant coastal resource issues with the proposal, and the permit conditions identify appropriate mitigations to avoid and/or lessen any potential for adverse impacts to said resources. The Commission incorporates these findings as if set forth here in full.

As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the proposed project, as conditioned, would have on the environment within the meaning of CEQA. Thus, if so conditioned, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

- City of Solana Beach Certified LUP
- California Coastal Commission Sea Level Rise Policy Guidance Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits, Adopted August 12, 2015
- DRAFT California Coastal Commission Residential Adaption Policy Guidance Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs, Revised March 2018
- Site Plans titled 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by Soil Engineering Construction, Inc., received August 22, 2018
- Landscape Improvement Plans for 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by George Mercer Associates Inc., received April 17, 2018
- Response to 3rd Party Review, by Soil Engineering Construction, Inc. dated April 16, 2008
- Coastal Bluff Evaluation and Basis of Design Report 235-249 Pacific Avenue, Solana Beach, California, by TerraCosta Consulting Group, dated November 4, 2010
- Coastal Hazard Discussion for Proposed Shore Protection 245, 241, 245 Pacific Avenue, Solana Beach, by Soil Engineering Construction, Inc., dated November 6, 2017
- Response to 3rd Party Review by Geopacifica Dated October 16, 2017, 2018 Repairs to Coastal Bluff – Shoreline Stabilization 245, 241, 245 Pacific Avenue, Solana Beach, by Soil Engineering Construction, Inc., dated November 24, 2017
- Response to 3rd Party Review by Geopacifica Dated February 26, 2018 Repairs to Coastal Bluff – Shoreline Stabilization 245, 241, 245 Pacific Avenue, Solana Beach, by Soil Engineering Construction, Inc., dated February 28, 2018
- Response to California Coastal Commission (CCC) May 16, 2018 Letter Concerning CDP #6-18-0288, Proposed Shore Protection 245, 241, 245 Pacific Avenue, Solana Beach, by Geo Soils, Inc., dated June 15, 2018
- Additional Slope Stability Analyses Justification for Bluff Stabilization Measures 235-245 Pacific Avenue, Solana Beach, California, by Soil Engineering Construction, Inc., dated January 3, 2019
- Resolution 2018-039, City of Solana Beach
- CDP Nos:
 - 6-96-021/Ratkowski
 - 6-89-029/Haggerty
 - 6-99-100/ Presnell et al.
 - 6-00-036/ Corn & Scism
 - 6-00-138/Greenbberg & Kinzel
 - 6-02-002/Gregg & Santana
 - 6-02-039/Seascape Chateau
 - 6-02-039-A1/Seascape Chateau

6-18-0288 (DeSimone, Schrage, & Jokipii)

- 6-02-084/Scism
- 6-03-126/Corn& Hajjar
- 6-07-132/Hawkins
- 6-07-134/Brehmer, Matchinske, & Caccavo
- 6-03-33-A5/Surfsong
- 6-04-083/Cumming & Johnson
- 6-08-68/Hamilton Trust
- 6-08-73/Cummings & DiNoto, et. al.
- 6-08-122/Winkler
- 6-09-033/Garber et. al.
- 6-13-025/Koman et al.
- 6-13-0437/Presnell & Graves
- 6-13-0948/Bannasch
- 6-16-0281/Winkler & Lucker
- LCP-6-SOL-16-0020-1