CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
7575 METROPOLITAN DRIVE, SUITE 103
SAN DIEGO, CA 92108-4421
(619) 767-2370

Th15a

Filed:	01/31/18
180th Day:	07/30/18
Staff:	D. Davis-SD
Staff Report:	05/25/18
Hearing Date:	06/07/18

STAFF REPORT: REGULAR CALENDAR

Application No.:	**6-17-0819**
Applicant:	**Solana Beach and Tennis Club**
Agent:	Walter Crampton
Location:	347-459 South Sierra Avenue, Solana Beach, San Diego County (APNs 298-053-20-01 to -57; 298-053-22-01 to -45; 298-053-23-01 to -50)
Project Description:	Infill a 75 ft. long, 3-6 ft. high, 1-4 ft. deep, 370 sq. ft. notch in a coastal bluff with erodible concrete; maintain 5 existing seacaves including removal of concrete protruding beyond the bluff face; adding additional erodible concrete where existing infills are undermined and/or flanked, and replacing approximately 6 inches of existing concrete with 6 inches of carved and colored erodible concrete flush with bluff face.
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The proposed project is located in the bluff face on a city-owned beach below an existing 152-unit condominium complex in the City of Solana Beach. The site currently contains five existing seacave infills on the public beach at the toe of the bluff which were constructed pursuant to a permit approved by the Commission in 1996.

The subject project would maintain and minimally expand the 5 existing seacave infills and infill a new 75-foot long notch in the coastal bluff. The condominium complex was developed in the early 1970s and is in a hazardous location due to shoreline erosion, but is not at risk at this time. The City's certified Land Use Plan (LUP) allows for pre-emptive construction of erodible concrete seacave/notch infills, even when a bluff top structure is not imminently threatened. The intent of the proposed construction of seacave/notch infills is to help prevent catastrophic bluff failure leading to the construction of a seawall, but still allow the bluff to erode landward, when properly maintained.

The Commission has recently raised concerns regarding projects that use erodible concrete to fill seacaves and notches when an existing structure is not at risk and the Commission is not required to approve shoreline protection. Most recently, in December 2017, the Commission denied a request to fill a notch in Solana Beach (CDP No. 6-15-1988/Monroe and Sloan), and the Commission denied essentially the same project as the subject request in January 2016 (6-96-102/Solana Beach & Tennis Club). These projects were denied in part because of the scope and scale of the proposals, and because of questions about whether the concrete mix proposed to fill the notches will erode at the same rate as the natural bluffs. The 5 existing seacaves proposed to be repaired on the subject site were filled with a concrete material that has not eroded, and as such, currently protrude onto the beach.

However, there are significant distinctions between those actions and the subject project. First, the subject project is a much smaller scale development than the Monroe/Sloan seawall. As proposed, the new project will be one of the shallowest and lowest in height infills placed on the bluff face in Solana Beach (See Exhibit 6). The Monroe/Sloan notch infill denied by the Commission was 90-feet long, 2- to 11-feet deep, 7- to 17-feet high. The proposed project is 75-feet long, 1- to 4-feet deep, and 3- to 6-feet high. The visual impact of this infill, which would be colored and textured to match the surrounding bluffs, is expected to be fairly minimal.

Second, the subject project includes special conditions that specify a particular mixture for the erodible concrete that the Commission's engineer has determined can be expected to erode in a manner that reasonably mimics the natural retreat rates of the surrounding bluffs. Conditions on the permit require testing of the erodible concrete after application, and if the mixture is incorrectly applied and thus not meet the specific erodibility criteria, the new infill material must be removed. If the Executive Director determines that removal of new infill would damage the natural bluff material, the applicant must apply to the Commission for an amendment to retain the non-erodible mix and propose mitigation to offset the impacts of the non-erodible concrete. Thus, the Commission has a level of assurance that the concrete applied to the subject site will have the erodible characteristics proposed by the applicant, and if it does not, that the material will be removed or mitigation will be required.

The intent behind allowing infills even when no existing primary structure is at risk is because given the presence of a "clean sands lens" on the bluffs and the history of bluff failures and shoreline protective structures in this region, it can be reasonably foreseen that without preventative measures, many if not most bluff top structures will be at risk in the future. Thus, some amount or type of shoreline protection along much of Solana

Beach may be unavoidable. However, the cycle of large collapses and rapid retreat can be slowed through the construction of erodible concrete seacave/notch infills.

In numerous past actions, the Commission has found that the filling of seacaves or notch overhangs as a preemptive measure has fewer impacts upon coastal resources and public access than the construction of seawalls and upper bluff structures. Unlike a wall located seaward of the natural bluff, seacave infills are placed within the bluff and do not result in immediate encroachment on the usable public beach area. Seacave fills in Solana Beach are typically considerably lower in height than a seawall that has to cover the clean sands lens located approximately 30 feet above the beach. And while the construction of seacave/notch infills helps to prevent catastrophic bluff failure, when erodible concrete is used, it still allows the bluffs to erode landward. Thus, is staff is recommending that in this case, the impacts associated with the new notch fill are offset by the benefits of delaying the need for a seawall.

With regard to the repairs proposed to the existing seacaves, staff has discussed with the applicant how some or all of the existing, non-erodible concrete in the caves could be removed and replaced with erodible concrete. Although the original permit only requires that the concrete be removed when it extends more than 6 inches beyond the bluff face, removing the existing material would allow for the bluffs to erode more naturally, and lessen the need to continually maintain the seacaves. The Commission's engineer believes that all or some of the existing concrete could be removed and replaced without substantial risk to the bluffs. However, the applicants have not been willing to propose a plan that includes removal of more than the seaward 6 inches of infill.

To assure that the erodible concrete is performing as expected, special conditions require that the applicant submit and implement a comprehensive monitoring program to ensure that the proposed seacave/notch infills are functioning as designed and are not adversely impacting coastal resources. **Special Condition #3** requires annual monitoring reports, and **Special Condition #4** notifies the applicant that failure to provide the required monitoring reports per **Special Condition #3** shall result in a conclusive presumption that the infill has fixed the back of the beach, and thus is permanent protection, and the applicant must apply for a coastal development permit or amendment to approve the protection as permanent, including mitigation for any unavoided impacts to public access, recreation, shoreline sand supply and visual quality. Mitigation could include sand supply replacement, additional public access, and recreation mitigation, or an encroachment agreement with the City.

Furthermore, because permanent shoreline protection has impacts on public access, **Special Condition #4** notifies the applicant that failure to submit a monitoring report required pursuant to **Special Condition #3** (or the follow up coastal development permit or amendment), will constitute a violation of public access provisions of the Coastal Act and, thus, the applicant would be subject to civil penalties pursuant to Section 30821 of the Coastal Act commencing from the date of the deadline to submit a monitoring report.

If the material does not erode as anticipated, **Special Condition #9** requires that if any portion of the existing or proposed seacave/notch infills encroaches greater than six inches

seaward of the adjacent natural bluffs, that the property owner obtain a CDP amendment from the Commission to remove the excess fill or otherwise remedy the situation. The six-inch aesthetic layer, which is proposed to be layered on the face of the 5 existing infills, provides an opportunity to monitor the erodibility of the new mixture in a relatively short span of time.

To ensure that the matter of unpermitted development is resolved in a timely manner, **Special Condition #13** requires that the applicant satisfies **Special Condition #6** within 180 days and all other prior-to-issuance conditions of this permit within 60 days of Commission action, or within such additional time as the Executive Director may grant for good cause.

The Commission's Sea Level Rise Policy Guidance provides direction to consider various adaptation strategies to consider in reviewing requests for shoreline development. The Guidance notes that adaptation strategies should be chosen based on the specific risks and vulnerabilities of a region or project site and the applicable Coastal Act and LCP requirements, with due consideration of local priorities and goals. The circumstances in Solana Beach, the presence of a clean sands lens and a bluff top that is substantially developed, present a significant challenge to the goal of avoiding shoreline protective devices. Allowing preemptive filling of notches and seacaves is one way in which bluff and shoreline protective devices can be limited. Seacave and notch infills allow the City, and the region as a whole, more time to pursue other non-structural methods, such as beach replenishment, to protect the bluffs, and/or moving the line of bluff-top development landward away from the bluff edge in order to delay the need for more substantial shoreline protection.

Commission staff recommends **approval** of coastal development permit application 6-17-0819 as conditioned.

TABLE OF CONTENTS

APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-17-0819 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 6-17-0819 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

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

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

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

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

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

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Submittal of Final Plans.**

   (a) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and written approval of the Executive Director, revised final plans approved by the City of Solana Beach that are in substantial conformance with the plans prepared by TerraCosta Consulting Group dated 12/31/17. Said plans shall include the following:

      i. The infill shall not exceed a length of 75 feet, and a height greater than 6 feet.

      ii. Sufficient detail regarding the construction method and technology utilized for texturing and coloring the infill. Such plans shall confirm, and be of sufficient detail to verify, that the infill color and texture closely match the adjacent natural bluffs, including a provision of a color board indicating the infill material.

      iii. During construction of the approved development, disturbances to sand and intertidal areas shall be minimized to the maximum extent feasible. All excavated beach sand shall be re-deposited on the beach. Local sand, cobbles or shoreline rocks shall not be used for backfill or for any other purpose as construction material.

      iv. The seacave and notch infills shall conform as closely as possible to the natural contours of the bluff, and shall not protrude beyond the existing "drip-line" (a parallel line extending down the face of the bluff to the beach) or the stringline of the adjacent natural bluff on either side of each infill.

      v. The erodible concrete for the seacave/notch infills shall be consistent with the submitted plans and shall be designed to provide a material with

erosion characteristics similar to that of the adjacent natural bluff as provided for in Special Condition #2 of this permit.

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

2. Concrete Erodibility Testing Plan.

(a) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit, for the review and written approval of the Executive Director, a Concrete Erodibility Testing Plan that provides for the following:

i. An inspector, paid for by the applicant, shall be present at the plant when the concrete is prepared to confirm the concrete and materials are handled, batched, and mixed in accordance with ASTM C94 standard specification for ready mixed concrete and the Testing Plan required by this Special Condition. An inspector shall also be present at the job site to collect concrete samples and fabricate concrete test cylinders for compressive strength testing by a qualified testing and inspection company.

ii. All inspection personnel shall be qualified and shall work under the direction of a California registered civil engineer.

iii. At the job site, an inspector shall collect a minimum of four concrete test cylinders from each ready mix truck for subsequent 28-day unconfined compression test by a qualified testing and inspection agency, and the results shall be provided to the permittee and the Executive Director. The anticipated 28-day unconfined compressive strength for the specified erodible mix design is 375 PSI with some variation, and shall be deemed to be in non-compliance if the Unconfined Compressive Strength (UCS) for any test cylinder exceeds 500 PSI.

iv. If any of the unconfined compressive strength tests exceed 500 PSI, then the applicant shall apply to the Commission for a permit or permit amendment to remove the new infill material and replace it with erodible concrete that meets the erodibility requirements of less than 500 PSI. If the Executive Director determines that removal and replacement of all or some of the infill would damage or cause instability to the natural bluff material, the applicant shall apply to the Commission for an amendment to this CDP to retain the non-erodible mix. The application shall propose mitigation to offset the impacts of the non-erodible concrete.

v. Regardless of the UCS of any test cylinder, if annual monitoring of the erodible concrete as required by Special Condition #3 of this permit indicates that the erodible concrete extends more than six inches seaward of the face of the natural bluff, within 30 days of the completion of the annual monitoring, the applicant shall apply for a permit or permit amendment to remove all portions of the erodible concrete that protrude seaward of the natural bluff face.

(b) The permittee shall undertake development in conformance with the above phasing and testing protocol, unless the Commission approves an amendment to this permit or the Executive Director determines that no amendment is legally required for any proposed minor deviations.

3. **Monitoring Program.**

(a) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit to the Executive Director for review and written approval, a monitoring plan prepared by a registered civil or geotechnical engineer for the existing and proposed seacave/notch infills on the subject site which shall incorporate the following:

i. Current measurements of the distance between the condominiums and the bluff edge (as defined by Section 13577, Title 14 of the California Code of Regulations), and provisions for these measurements to be taken annually after completion of construction for the life of the project. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, or other approved methods so that annual measurements can be taken at the same bluff location and comparisons between years can provide information on bluff retreat.

ii. Provisions for establishing any differential retreat between the natural bluff face and each of the seacaves/notches by measuring both ends of the seacaves/notches and at 20-foot intervals (maximum) along the top of the seacave/notch face and the bluff face intersection, annually after completion of construction, for the life of the project. The condition of the seacave/notch should be documented through photography. The program shall describe the method by which such measurements shall be taken.

iii. Provisions for the annual measurement of the erosion of the proposed erodible concrete infill. The program shall describe the method by which such measurements shall be taken.

iv. Provisions for submittal of a report to the Executive Director of the Coastal Commission on June 1st every two years, for a six-year period beginning after completion of construction and every 3 years thereafter for

the life of the project. Additional reports shall be submitted by March 31 of the year after which any of the following events occur:

1. A 20-year storm event,

2. An "El Niño" storm event, or

3. A major tectonic event of magnitude 5.5 or greater affecting San Diego County.

v. Each report shall be prepared by a registered civil or geotechnical engineer. The report shall contain the measurements and evaluation required in sections i, ii, and iii of this Special Condition. The report shall also summarize all measurements and provide analysis of trends, annual retreat or rate of retreat, and the stability of the overall bluff face, including the upper bluff area, and the stability of the seacave/notch infills on the natural bluff, and shall include suggestions that do not involve the construction of structures on the face of the bluff for correcting any problems. In addition, each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the project. If any portion of the existing or proposed seacave/notch infills is found to extend seaward of the 'drip line' of the natural bluff by more than six (6) inches in any location, the report shall include alternatives and recommendations to remove or otherwise remedy this condition such that no seaward extension of the infill will remain.

vi. Special Condition #2 of CDP No. 6-96-102 may be satisfied through compliance of this condition.

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

4. Monitoring and Follow-Up Permit.

(a) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit to the Executive Director for review and written approval, an agreement executed on behalf of themselves and all successors and assigns to submit the following future new permit applications or permit amendment applications as required below:

i. Within three months of submission of the monitoring report required in Special Condition #3, the permittee shall apply for a coastal development

permit amendment for any necessary maintenance, repair, changes or modifications to the project recommended by the monitoring report that requires a coastal development permit or amendment.

ii. If, based on the monitoring report required in Special Condition #3, the Executive Director determines that the back of the beach has been effectively fixed by the infill, or, as described in subsection (a)(iii) of this Special Condition, if the permittee fails to submit a monitoring report required by Special Condition #3, the permittee shall apply for a coastal development permit or amendment within 3 months of the Executive Director's determination or within 3 months of the date a monitoring report submittal requirement is not satisfied, whichever is applicable, unless additional time is granted by the Executive Director for good cause. The application shall evaluate and propose mitigation for any impacts of the project as permanent shoreline protection that have not been previously addressed. The application must include an analysis of the feasibility of removing all or portions of the fill, and methods of calculating mitigation fees for impacts to sand supply and public access and recreation. Any request for additional time must be submitted to the Executive Director at least ten days before the deadline, and approved in writing by the Executive Director.

iii. Failure to provide the required monitoring reports per Special Condition #3 shall result in a conclusive presumption that the infill has fixed the back of the beach, and thus is permanent protection, and the permittee shall accordingly apply for a coastal development permit or amendment as described in subsection (a)(ii) of this Special Condition above.

iv. Failure to submit a monitoring report as required pursuant to Special Condition #3, or failure to submit a follow up coastal development permit or amendment as required by subsection (a)(ii) of this Special Condition, shall constitute a violation of public access provisions of the Coastal Act and, thus, the permittee will be subject to civil penalties pursuant to Section 30821 of the Coastal Act. Penalties shall accrue commencing from the date a deadline to submit a monitoring report pursuant to Special Condition #3 is not met, or from the date a follow up coastal development permit or amendment application is due, unless additional time is granted by the Executive Director for good cause. Any request for additional time must be submitted to the Executive Director at least ten days before the deadline, and approved in writing by the Executive Director.

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

5. **Storage and Staging Areas/Access Corridors.**

   (a) **PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT**, the applicant 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:

      i. No overnight storage of equipment or materials shall occur on the sandy beach or at the Fletcher Cove Parking Lot, and the use of other public parking spaces shall be minimized. During the construction stages of the project, the permittee shall 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 shall be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seacave/notch infills. Construction equipment shall not be washed on the beach or in the Fletcher Cove parking lot.

      ii. Access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.

      iii. No work shall occur on the beach on weekends, holidays or between Memorial Day weekend and Labor Day of any year.

      iv. The applicant shall submit evidence that the approved plans and plan notes have been incorporated into construction bid documents. The applicant shall remove all construction materials/equipment from the staging site and restore the staging site to its prior-to-construction condition within 24 hours following completion of the development.

   (b) The permittee 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.

6. **Deed Restriction/CC&R's Modification.**

   (a) **PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT,** applicant Solana Beach and Tennis Club, on behalf of the Homeowners' Association (HOA) at 347-459 South Sierra Avenue, Solana Beach, San Diego County, shall do one of the following:

      i. Submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded a deed restriction in a manner that will cause said deed restriction to appear on

the title to the individual condominium units, and otherwise 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 they apply to the HOA, as covenants, conditions and restrictions on the use and enjoyment of the individual condominium units. The deed restriction shall include a legal description of the entire parcel or parcels against which it is recorded. 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, or

ii. Modify the condominium association's Declaration of Restrictions or CC&Rs, as applicable, in a form and content acceptable to the Executive Director, to reflect the obligations imposed on the homeowners' association by the conditions of CDP #6-17-0819. This addition to the CC&Rs may not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit.

7. **Removal of Permanent Irrigation.**

(a) PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, a landscape irrigation removal plan for the subject properties at 197 and 201 Pacific Avenue. The plan shall detail the location of all existing permanent irrigation and fully describe the method of removal or capping such that no permanent irrigation features remain in service within 100 feet of the bluff edge. WITHIN 30 DAYS FOLLOWING ISSUANCE OF THE PERMIT, the applicant shall remove or cap all permanent irrigation features from each of the upper bluff-top lots, consistent with the approved plans.

(b) The permittee 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.

8. **As-Built Plans.** Within 60 days following completion of the project, the permittee shall submit as-built plans of the approved seacave/notch infill. In addition, within 60 days following completion of the project, the permittee shall submit certification by a registered civil engineer, acceptable to the Executive

Director, verifying the seacave/notch infill has been constructed in conformance with the approved plans for the project.

9. **Future Maintenance/Debris Removal.** The permittee shall remove all debris deposited on the beach or in the water as a result of the construction of the seacave/notch infill. The permittee shall also remove all debris deposited on the beach or in the water as a result of failure or damage to the shoreline protective device in the future. In addition, the permittee shall maintain the permitted seacave/notch infill in its approved state except to the extent necessary to comply with the requirements set forth below. Maintenance of the seacave/notch infills shall include, at a minimum, maintaining its color, texture, and integrity. Any change in the design of the project or future additions/reinforcement of the seacave/notch infill beyond minor re-grouting or other exempt maintenance as allowed by Section 13252, Title 14, of the California Code of Regulations, will require a coastal development permit or amendment. However, in all cases, if, after inspection, it is apparent that repair and maintenance is necessary, the permittee shall contact the Commission's San Diego office to determine whether a permit or amendment is necessary, and shall subsequently apply for a coastal development permit or amendment for the required maintenance. If at any time after project completion, any portion of the proposed seacave/notch infill is found to extend seaward of the face of the natural bluff by more than six inches in any location, the permittee shall obtain and implement a coastal development permit or amendment to remove or remedy the excess infill such that no portion of the infill remains seaward of the drip line between the adjacent natural bluff on either end of the infill.

10. **Assumption of Risk.** By acceptance of this permit, the applicant acknowledges and agrees (1) that the site may be subject to extraordinary hazards from bluff collapse and erosion; (2) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (3) 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 (4) 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.

11. **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. The permittee shall not use this permit as evidence of a waiver of any public rights that exist or may exist on the property.

12. **Reliance on Permitted Armoring.** No future development that is not otherwise exempt from coastal development permit requirements, or redevelopment of the existing principal structures on the bluff top properties governed by this permit,

shall rely on the permitted bluff retention devices (existing and proposed seacave/notch infills) 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. As used in these conditions, "redeveloped" or "redevelopment" is as defined by the Solana Beach LUP as certified by the Commission in August 2014 in the policy defining Bluff Top Redevelopment, which is hereby incorporated by reference.

13. **Condition Compliance.** Within 180 days of Commission action on this coastal development permit, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in Special Condition #6 of this permit. Within 60 days of Commission action on this coastal development permit, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in the conditions hereto, with the exception of Special Condition #6, that the applicant is required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provision of Chapter 9 of the Coastal Act.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION/HISTORY

There are two major components of the proposed project: 1) infilling an existing notch in the bluff face with erodible concrete and 2) maintaining and repairing the 5 existing infills. Both the 75-foot long notch and the 5 existing seacave infills are located on the coastal bluffs below the Solana Beach and Tennis Club, an existing 152-unit, multi-story condominium complex in the City of Solana Beach (Exhibit #2). The site was developed in the early 1970s, prior to passage of the Coastal Act. Currently, the closest portions of the condominium buildings are approximately 15.2 feet from the bluff edge. The bluffs are owned by the condominium homeowners association and there is an existing easement for public recreational use located from the mean high tide line to approximately the toe of the bluff, which was accepted by the County of San Diego in 1972. The site is located approximately 0.3 miles from Fletcher Cove, the main coastal access point in Solana Beach.

The first component is infilling the 75-foot long, 3- to 6-foot high, 1- to 4-foot deep, 370 square foot notch in the face of an approximately 65-foot high coastal bluff, with an erodible concrete mix. In order to apply the erodible concrete, a 12-inch thick cast-in-place or precast soil/cement mix facing will be embedded a minimum of one foot into the bedrock at the base of the bluff. The area behind the facing will be backfilled with an air-blown soil/cement mixture, and the facing will be temporarily anchored to this mixture with 18-inch long reinforcing bars. Once the infill material is stabilized, the facing and reinforcing bars will be removed, and the erodible concrete will be colored and sculpted to match the appearance of the natural bluff. The infill will be embedded into the bluff

using an erodible concrete 1-foot by 1-foot key located at the top and bottom of the infill and is proposed to extend from the rear of the notch seaward up to the drip line of the bluff face. The proposed erodible concrete mixture is designed to erode at approximately the same rate as the adjacent natural bluffs.

The 5 existing infills, approved by the Commission in 1996, cover approximately 250 square feet of the bluff face below the condominium complex (CDP No. 6-96-102). The filled caves range in height from 3 to 11 feet and range in depth from 4 ½ to 24 feet. As proposed, any portion of the infill that protrudes more than 6 inches beyond the face of the bluff will be removed. Work will consist of excavation of any sand covering the infill down to the bedrock shore platform. Two-inch-diameter holes, 12-inch on center, will be drilled into the infill, parallel to the surrounding natural bluff face, below or slightly landward of the existing drip line. A water-based expansive mortar product will be poured into the drilled holes. As the mortar cures, it will expand and split the infill along the line of 2-inch diameter holes. Minor hand-trimming will be performed to sand down the jagged edges of the infill and the beach sand will be replaced. All infill fragments will be hauled off-site.

In addition to removing portions of the existing infill that extend beyond the bluff face, approximately 6 inches of the existing fill material in each cave is proposed to be removed and replaced with new erodible concrete up to the dripline of the bluff. On the sides of the caves where the existing infills have been undermined and flanked, additional erodible concrete will be added and keyed into the bluff approximately one foot on both sides of the existing fill. The same erodible concrete mixture used for the new notch infill will be used for the new 6-inch aesthetic layer and additional infilling of the existing infills, and will be colored and sculpted to resemble the surrounding natural bluff material. As discussed in greater detail below under Section B. Geologic Stability, the erodible concrete proposed with the current project has significantly different mix properties than the concrete used on the site in 1996.

The Commission certified the City's Land Use Plan (LUP) in 2012; however, the City of Solana Beach does not yet have an implementation plan; thus, the LCP is not fully certified. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the City's certified LUP used as guidance.

Site History:

The five existing seacave infills on the subject site were originally approved by the Commission on November 12, 1996 (Ref: CDP No. 6-96-102/Solana Beach & Tennis Club). Similar to the method proposed for the proposed new infill, the existing infill construction consisted of a 12-inch thick cast-in-place or precast soil/cement mix facing embedded a minimum of one foot into the bedrock at the base of the bluff. The area behind the facing was backfilled with an air-blown soil/cement mixture, and the facing was anchored to this mixture with 18-inch long reinforcing bars. The sea cave plugging and filling procedure was designed with a leaner soil-cement mix on the external facade and a stronger mix internally. This process was intended to allow the erosion of the plugs to match the rate of natural erosion of the adjacent bluff at least until the stronger material

was exposed. The external facade was then colored and textured to match the natural bluff.

However, portions of the concrete infills did not erode at the same rate as the adjacent natural bluffs, as was expected when the project was approved in 1996. A geotechnical report, dated January 30, 2018, provides an analysis of the performance of the existing 'leaner soil-cement mix' concrete infills:

> *"We have observed that marine erosion is starting to flank the side and bottom edge of the concrete infills at the base of the sea cliff. . . . This erosion will continue to grow as wave forces erode the lower sea cliff. The erosion has resulted in concrete infill edges that protrude beyond the face of the sea cliff. These protrusions have become unsightly and likely contribute to accelerated erosion of the sea cliff immediately adjacent to the infill by trapping wave energy. As these notches enlarge adjacent the existing infills, blockfall failures will eventually jeopardize the bluff-top improvements."*

The applicant does not provide a reason why the infills have retreated at a slower pace in the 2018 geotechnical report but does acknowledge that in monitoring reports prepared by Vinje & Middleton Engineering, Inc., from 1998 to 2005, little erosion of the infills was noted. In an amendment request to the original permit approving the construction of the five seacave infills, the applicant states that the reason why the infills have retreated at a slower pace than the natural Torrey Sandstone bluff material at the subject site is because:

> "*. . .the Torrey Sandstone has widely ranging strengths at any given location. Concrete, erodible or otherwise, has a relatively uniform strength. In areas where the formation is locally weaker than the infill, differential erosion will occur. In areas where the infill and formation have similar strength properties, erosion will be similar*. . . (Ref: TerraCosta Letter dated June 25, 2014)."

A condition of the 1996 approval required that the applicant monitor the seacave/notch infills and apply for a coastal development permit to implement corrective measures if the infills were ever found to extend seaward of the face of the natural bluff by more than six inches. The current project is intended to fulfill this condition.

The infill has been protruding onto the beach by more than 6 inches for at least 5 years now, and there have been several proposals by the applicant to address the encroachments. As described below under section B. Geologic Stability, not all of the required monitoring reports were submitted as required by the original permit. Monitoring reports were resumed when it was apparent that the infill was protruding by more than 6 inches beyond the bluff face, and thus, it is likely that the first application to remove the encroachment should have been submitted for Commission review earlier than it was.

A version of this project that did not propose the new 75-foot long notch infill in the coastal bluff was approved by the City of Solana Beach in 2013 (Ref: Resolution 2013-

039 approved April 24, 2013). The applicant then applied to the Commission for a CDP (CDP 6-96-102-A1). However, after discussions with Commission staff, in 2014, the applicant modified the project proposal to include filling 75-foot long notch in the coastal bluff and to remove more of the portions of existing infill located seaward of the bluff face. As a result of the modified project proposal, the City alerted the applicant that a new City Resolution would be required. The applicant withdrew CDP 6-96-102-A1 in 2015 in order to obtain a new City Resolution (Ref: Resolution 2015-094 approved August 25, 2015), and applied for a new CDP amendment in 2015 to infill the 75-foot long notch and maintain and repair the existing infills including removal of protruding concrete edges, additional concrete infilling where undermining and flanking of the infill had occurred, and installation of carved and colored erodible concrete on the face of the existing infills (6-96-102-A2). However, in January 2016, the Commission denied the permit amendment due to a lack of sufficient evidence that the proposed erodible concrete would be correctly constructed and would have compression strength comparable to the adjacent natural bluffs. The subject project is essentially the same as the amendment the Commission denied in 2016, with the exception of the testing procedure. Unlike the amendment denied in 2016, the testing procedure proposed now has a more vigorous process including qualified inspectors, supervised by a California registered civil engineer, who will be reviewing the processing and handling of the erodible concrete mixture from the factory to the project site. Additionally, the old testing procedure using the erodibility index was less specific than the more stringent testing procedure of the current project that uses the 500 PSI threshold to determine if the material is non-complaint.

Surrounding Shoreline Protection

The area surrounding the site includes both natural bluffs and shoreline protection. The condominium complex at 325 South Sierra Avenue (Seascape Shores HOA), located directly to the north of the subject property, is partially armored with a seawall, seacave/notch infills, and mid/upper bluff retaining walls (CDP Nos. 6-04-092; #F9143). To the north of Seascape Shores, the Surfsong Condominium complex at 205-239 South Helix, the bluff is almost entirely armored with a seawall, seacave/notch infills, and mid/upper bluff retaining walls (CDP Nos. 6-03-033; 6-03-033-A5; 6-05-58-G).

The condominium complex at 585 South Sierra Avenue (Seascape Sur HOA), located directly to the south of the subject property, is protected by various seacaves/notch fills and a 20-foot long, 20-foot high seawall across a portion of the site (6-84-573-A2).

B. GEOLOGIC STABILITY

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 relevant LUP policies.

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...

Section 30253 of the Act states, in 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...

In addition, the following certified 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:

- *Infill/Bluff Stabilization – Seacave/Notch Infill (See Appendix B Figure 1A) – This first solution is designed to address sea caves and undercut portions of the lower dense sandstone bluff where the clean sand lens is not yet exposed. If left uncorrected, the sea cave/undercut will eventually lead to block failures of the lower sandstone, exposure of the clean sand lens and landward bluff retreat. This failure exposes the clean sand lens of the upper bluff terrace deposits triggering rapid erosion and landward retreat of the upper bluff, which eventually endangers the structures at the top of the bluff. If treated at this stage, the Bluff Retention Device will minimize the need for a future higher seawall and future upper bluff repair. This alternative is not designed as a structural wall, is not reinforced, does not include tiebacks, and uses only erodible concrete which shall erode at the same erosion rate as the surrounding natural bluff material. The infill is required to maintain a textured and colored face mimicking the existing bluff material. Erodible concrete seacave/notch infills are designed to erode with the natural bluff and, when maintained to do so, are not subject to the sand supply mitigation, public access and recreation mitigation, encroachment/removal agreement, or authorization timeline policies of the LUP.*

The LUP defines Bluff Retention Devices as follows:

> ***Bluff Retention Devices*** *means a structure or other device, including seacave/notch infills, dripline infill, coastal structures, upper bluff systems, and temporary emergency devices, designed to retain the bluff and protect a bluff home or other principal structure, or coastal dependent use from the effects of wave action erosion and other natural forces.*

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.*

Policies 4.26, 4.27, and 4.28 of the Hazards and Shoreline/Bluff Development chapter state the following in regards to bluff top irrigation, landscaping, and site drainage:

> *Policy 4.26: With respect to bluff properties only, the City will require the removal or capping of any permanent irrigation system within 100 feet of the bluff edge in connection with issuance of discretionary permits for new development, redevelopment, or shoreline protection, or bluff erosion, unless the bluff property owner demonstrates to the satisfaction of the Public Works Director, or the CCC if the project is appealed, that such irrigation has no material impact on bluff erosion (e.g., watering hanging plants over hardscape which drains to the street).*
>
> *Policy 4.27: Require all bluff property landscaping for new development to consist of native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species.*

Policy 4.28: All storm water drain systems that currently drain or previously drained towards the west over the bluff shall be capped. These systems should be redesigned to drain directly, or through a sump system, and then pumped to the street in compliance with SWP [State Water Project] *2007-0001 and consistent with SUSMP* [Standard Urban Stormwater Mitigation Plan] *requirements. This policy shall be implemented as a condition of approval for all discretionary permits issued for bluff properties or within 5 years of adoption of the LCP, whichever is sooner.*

Policies 4.18 and 4.48 of the Hazards and Shoreline/Bluff Development chapter state the following in regards to the required analysis for a new seacave/notch infill and the expansion and/or alteration of an existing seacave/notch infill:

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 4.53.

Policy 4.48: A Seacave/Notch Infill shall be approved only if all the findings set forth below can be made and the stated criteria satisfied.

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

1. *The Seacave/Notch Infill is more likely than not to delay the need for a larger coastal structure or upper bluff retention structure, that would, in the foreseeable future, be necessary to protect an existing principal structure, City facility, and/or City infrastructure, from danger of erosion. Taking into consideration any applicable conditions of previous permit approvals for development at the 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:*

    - *Controls of surface water and site drainage;*
    - *A smaller coastal structure; or*
    - *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.*

2. *The bluff property owner did not create the necessity for the Seacave/Notch Infill 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.

3. *The location, size, design and operational characteristics of the proposed seacave/notch infill 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 bluff retention device and the seacave/notch infill is the minimum size necessary to protect the principal structure, and 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 Seacave/Notch Infill shall be designed and constructed:*

1. *To avoid migration of the Seacave/Notch Infill onto the beach;*

2. *To be re-contoured to the face of the bluff, as needed, on a routine basis, through a CDP or exemption, to ensure the seacave/notch infill conforms to the face of the adjoining natural bluff over time, and continues to meet all relevant aesthetic, and structural criteria established by the City;*

3. *To serve its primary purpose which is to delay the need for a larger coastal structure, and designed to be removable, to the extent feasible, provided all other requirements under the LCP are satisfied; and,*

4. *To satisfy all other relevant LCP and City Design Standards, set forth for Bluff Retention Devices.*

The bluffs in Solana Beach are typically approximately 80 feet high, (the bluff at the subject site is approximately 65 feet high), and include a “clean sands” lens located between the Torrey Sandstone and Marine Terrace Deposits (at approximately elevation 25 to 35 feet). The clean sand layer has been described as a very loose sandy material with a limited amount of capillary tension and a very minor amount of cohesion, both of which cause the sandy material to dissipate easily, making this clean sand layer, once exposed, susceptible to wind-blown erosion and continued sloughing as the sand dries out and loses the capillary tension that initially held the materials together.

When ongoing wave action, often exacerbated by a lack of beach sand, results in bluff retreat and erosion, the presence of the clean sands creates a process where the clean sands rapidly undermine the upper sloping terrace deposits, causing the upper bluff to collapse, thereby exposing more clean sands to wind erosion, which then results in more

upper bluff collapses. This cycle can occur so quickly (over months or days, rather than years) that the upper bluff never achieves a stable angle of repose.

The process of undercutting and notching of the bluffs seen along the Solana Beach shoreline represents the natural process of bluff retreat and erosion in this portion of North San Diego County. The process has clearly accelerated in Solana Beach over the last two decades, as the amount of sand on the beaches has decreased and the bluffs are subject to more frequent wave action. Because all of the bluff top lots in Solana Beach (aside from one vacant lot at 523 Pacific Avenue) are currently developed with single and multi-family structures, there is very little opportunity for the bluffs to retreat without adversely affecting the safety and stability of bluff-top principal structures. Thus, some amount of shoreline protection along much of Solana Beach may be unavoidable. However, the cycle of large collapses and retreat can be slowed through the construction of erodible concrete seacave/notch infills.

The formation of the notch overhangs along this portion of the Solana Beach shoreline is generally attributed to increasing amounts of wave action. The lower bluff along this section of shoreline consists of Torrey Sandstone, which is one of the least resistant bedrock formations along the North County coast. As waves impact the Torrey Sandstone, notches are formed creating an overhanging layer of Torrey Sandstone. As the overhang loses support from beneath, its weight along with any structural weakness in the Torrey Sandstone formation eventually leads to a block-like failure. These existing overhangs will eventually collapse, exposing the clean sands and undermining the upper bluff and triggering progressive upper-bluff failures.

The seacave infill monitoring report for the subject site, dated 01/05/18, makes the following observation of the existing seacave infills at the subject site:

> *"This assessment of the infills indicates that they are generally structurally sound and functional at the present time. However, erosion of the adjacent bluff has resulted in limited flanking of the existing infills and requires maintenance to prevent the need for more aggressive stabilization measures in the future."*

The applicant's geotechnical report, titled Geotechnical Investigation Notice Infill Maintenance Solana Beach and Tennis Club and dated 01/30/18, makes the following observation and recommendations for the subject site:

> *"We have observed that marine erosion is starting to flank the side and bottom edge of the concrete infills at the base of the sea cliff . . ."*
>
> *" . . . The erosion has resulted in concrete infill edges that protrude beyond the face of the sea cliff. These protrusions have become unsightly and likely contribute to accelerated erosion of the sea cliff immediately adjacent to the infill by trapping wave energy. As these notches enlarge adjacent the existing infills, blockfall failures will eventually jeopardize the bluff-top improvements."*

With a current factor of safety for upper-bluff stability of 1.53, the Commission's engineer agrees with the applicant that the bluff-top residences are at not at risk at this time. In reviewing requests for shoreline protection, the Commission must assess the need to protect private residential development against the potential adverse impacts to public resources associated with construction of shoreline protection. Shoreline protection projects do have the potential to impact existing lateral access along the beach. Structures that fix the back of the beach stop the landward migration of the beach profile while the seaward edge continues to erode, thereby reducing the amount of dry sandy beach available to the public.

In numerous past actions, the Commission has found that the filling of seacaves or notch overhangs as a preemptive measure create fewer impacts upon coastal resources and public access than the construction of seawalls and upper bluff structures (#6-87-391/Childs; #6-92-82/Victor; #6-96-102/Solana Beach & Tennis Club; #6-97-1646/Lingenfelder; #6-98-25/Stroben; #6-98-29/Bennett; #6-99-091/Becker; #6-99-103/Coastal Preservation Association; #6-00-066/Pierce & Monroe; and #6-13-0948/Bannasch).

Similarly, Policy 4.48 of the City's LUP allows seacave/notch infill projects to be approved, to prevent catastrophic bluff collapse, even when an existing principal structure is *not* in imminent danger or does not meet the standard for requiring or allowing construction of a seawall, because the adverse impacts associated with these projects are significantly less than those for seawalls and because the infills may prevent catastrophic collapse of the upper bluff. Seacave fills are preferable to seawalls for several reasons. Unlike a wall located seaward of the natural bluff, seacave infills are placed within the bluff and do not result in immediate encroachment on the usable public beach area. Seacave infills in Solana Beach are typically lower in height than a seawall, which has to cover the clean sands lens located approximately 30 feet above the beach. And while the construction of seacave/notch infills helps to prevent catastrophic bluff failure, they still allow the bluffs to maintain a natural and expected retreat landward, particularly if they are filled with an erodible concrete mix that erodes at the same rate as the surrounding natural bluffs.

However, both the Commission and advocacy groups such as Surfrider have raised concerns about whether the concrete mix proposed to fill the notches will erode at the same rate as the bluffs, or indeed, whether it will erode at all. The proposed infill of the 75-foot long notch with erodible concrete and repair and maintenance to the 5 seacaves fills project is essentially identical to the amendment denied by the Commission in 2016 (CDP #6-96-102-A2). In addition, in December 2017, the Commission denied a request to fill a 90-foot long, 2- to 11-foot deep, 7- to 17-foot high notch in the bluffs at 197-201 Pacific Avenue, Solana Beach, findings that the potential future benefits of avoiding a seawall at that location did not outweigh the impacts to shoreline sand supply and visual quality that would result (CDP #6-15-1988/Monroe & Sloan). Nevertheless, it is necessary to evaluate the proposed project on its own merits, taking into consideration the scope and scale of the subject project, and ways in which potential impacts can be mitigated.

The evidence from past fills as to the success of erodible concrete is mixed. Surfrider has submitted photo documentation of various infills that have been approved by the Commission in the past in Solana Beach, including the 5 caves on the subject site, as evidence that the infills do or do not erode consistently with the surrounding bluffs. However, the Commission has approved numerous projects in Solana Beach to fill seacave/notch infills with erodible concrete designed to erode at roughly the same rate as the adjacent natural bluff, thus reducing or eliminating impacts to sand supply and to public access and recreation (a partial sample includes: #6-84-573-A1; #6-97-165-A3; #6-98-009; #6-99-91; #6-99-095; #6-00-036; #6-02-085; #6-13-0948). There has not been a comprehensive study done to evaluate the effectiveness of each of these projects, but individual monitoring reports are required to be submitted to the Commission, and the seacave and notch fills do appear to have limited catastrophic bluff failures and delayed the need for seawalls. The four most recent seacave/notch infills constructed in Solana Beach, which used a similar erodible concrete mix as currently proposed, appear to be functioning as designed (Ref: 6-99-095/City of Solana Beach; 6-00-066/Pierce et. al.; 6-99-103/Coastal Preservation Association; 6-99-091/Becker). Each of the four seacave infill CDPs referenced above requires removal of any portion of the seacave infill that encroaches more than 6 inches seaward of the bluff as a result of erosion, but no removal has been required thus far.

Artificial infills do not erode at the identical rate or manner as the natural material, but this should not be taken as evidence that preemptively filling notches with erodible concrete cannot be a useful approach to dealing with shoreline hazards. Visual inspection and monitoring at past infill sites confirms that erodible concrete does erode, and existing infill projects scattered along Solana Beach's bluffs that have not been covered with seawalls suggests infills do delay the need for seawalls. The impacts associated with differing rates of erosion of erodible concrete are addressed by the Commission requiring that seacave plugs and filled notches be maintained over time such that portions of the fill material that extends beyond the surrounding natural bluff face be periodically removed, so that the fill does not permanently fix the back of the beach. The specific components of the proposed infill material are discussed in detail below, under **Erodibility Testing**, but for the proposed project, the Commission's engineer has determined that the proposed material is appropriate and will reasonably mimic the natural retreat rates of the surrounding bluffs.

The applicant acknowledges that the 5 existing seacaves on the site are not eroding with the natural bluffs. As described above, the mixture used to fill these caves is no longer used, because it does not provide the appropriate level of erodibility. Even so, the impacts of the infill have been limited through the conditions that require if any portion of the infills are found to extend seaward of the drip line of the natural bluff by more than six inches in any location, maintenance or a new permit is required to correct the differential.

Special Condition #2 of CDP No. 6-96-102, the permit allowing the original seacave fill, required the applicant to submit monitoring reports on an annual basis for the first three years of the project by May 1 (beginning the first season after construction of the project was completed). After the first three years, the reports were to be submitted at 5-year

intervals following the last report. Special Condition #3 of CDP No. 6-96-102 required the applicant to apply for a coastal development permit to implement corrective measures if a monitoring report indicated that an infill extended seaward of the face of the natural bluff by more than six inches. The applicant submitted monitoring reports in compliance with the condition for 1998, 1999, 2000, and 2005. The 2005 monitoring report did not state nor indicate that the 5 existing infills were protruding significantly seaward of the natural bluff face. The next monitoring report, which had to be submitted by May 1, 2010, was not submitted in compliance with Special Condition #2 of CDP No. 6-96-102. Non-compliance with the monitoring requirements of the original permit resulted in unpermitted development on the subject site. Approximately 7 years passed before the applicant submitted the first amendment request (CDP No. 6-96-102-A1) on June 21, 2013, to remove the edges of the existing infill protruding seaward of the natural bluff material. In the amendment request, the applicant submitted an Infill Monitoring Report prepared by TerraCosta dated 12/23/13. The report indicated that the infills were extending seaward of the drip line by more than six inches in several locations. The latest monitoring report, dated 01/05/18, provides pictures and cross-sections of the infills showing the protruding edges of the existing infills. The applicant is now proposing to remove the protruding edges of the existing infills.

As with the previously approved projects, the proposed filling of the subject notch is designed as a preventive measure to stop or reduce the potential for collapses of the overhanging area and to stabilize the bluff in an area where there is evidence of the presence of a “clean sands” lens. If erosion at the site is not slowed, the existing bluff-top structures are likely to be threatened in the foreseeable future. The proposed project is a relatively minimal type of protection that can be expected to delay the need for a much larger seawall-type of shoreline protection that is far more visually obtrusive, potentially occupies public beach area, and requires more alteration of the natural landform.

It is important to note that as described above, the condominium complex was developed in 1973. No substantial modifications have occurred to the complex since its construction. Thus, should this structure become threatened by erosion in the future, it could be considered an existing structure requiring protection as mandated by Section 30235. A failure resulting from the collapse of the notch overhang located on the bluff face below both o the condominium complex would likely result in the need for shoreline protection in the near future. Therefore, because of the presence of existing principal structures, filling the notch now may prevent the construction of more substantial shoreline protection later, preventing significantly greater impacts on coastal resources.

The California Coastal Commission Sea Level Rise Policy Guidance, adopted August 12, 2015, also provides direction to consider various adaptation strategies to consider in reviewing requests for shoreline development. The Guidance notes that adaptation strategies should be chosen based on the specific risks and vulnerabilities of a region or project site and the applicable Coastal Act and LCP requirements, with due consideration of local priorities and goals. As described above, the circumstances in Solana Beach—the presence of a clean sands lens and a bluff top that is substantially developed—present a significant challenge to the goal of avoiding shoreline protective devices. The certified

LUP describes a variety of approaches to limit shoreline protection, including potentially allowing lower bluff walls in order to avoid the need for upper bluff protection, and allowing new development to be built in locations that may not be safe for the lifetime of the structure, where the applicant waives the right, if any, to future protection. Allowing preemptive filling of notches and seacaves is one way in which bluff and shoreline protective devices can be limited. Seacave and notch infills allow the City, and the region as a whole, more time to pursue other non-structural methods, such as beach replenishment, to protect the bluffs, or moving the line of bluff-top development landward away from the bluff edge in order to delay the need for more substantial shoreline protection.

Alternatives

Although both the Coastal Act and the City's certified LCP support the filling of seacaves/notches as a preventative measure, seacave and notch infills do alter the natural coastline. Therefore, it is important to analyze whether there are alternatives to a seacave/notch fill that would delay the need for a seawall with fewer adverse impacts. The City's certified LUP requires that alternatives, such as controls of surface water and site drainage, a smaller coastal structure, and other non-beach and bluff face stabilizing measures, be examined.

As cited above, groundwater controls, irrigation restrictions, and installation of drought-tolerant plantings is required by the City's certified LUP. The City, based upon the advice and recommendation of a licensed geotechnical/engineer, found that the bluff property owner did not create the necessity for the seacave/notch infill by unreasonably failing to implement generally accepted erosion and drainage control measures (See, City of Solana Beach Resolution 2015-094). The City also required in its resolution approving the proposed project that the applicant remove or cap any permanent irrigation system within 100 feet of the bluff edge and cap all stormwater drain systems that currently drain or previously drained towards the west over the bluff. All stormwater systems must be redesigned to direct drainage to the street. However, since upper bluff runoff is not the cause of erosion, stricter irrigation/landscaping controls will not mitigate ongoing enlargement of seacaves/notches, and could not serve as an alternative to infilling in this case.

However, failures of irrigation lines or excess watering of the bluff-top can trigger collapses of bluff-top sediments. Thus, the City's certified LUP recognizes this danger and requires that with the approval of any shoreline protection permit, irrigation located within 100 feet of the bluff edge must be capped or removed. Therefore, **Special Condition #7** requires the applicant to remove or cap all permanent irrigation devices on the subject bluff-top property within 100 feet of the bluff edge to prevent over-watering or accidental breakage of irrigation lines that could cause water to spill onto the bluff. The certified LUP requires that bluff landscaping for new development consist of native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species. Any future applications for new development on the subject bluff-top property will be conditioned to require only native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species pursuant to the certified LUP.

Underpinning of the existing structures could potentially be considered as an alternative to the proposed project; however, this would not stop the seacaves/notches from collapsing and eventually undermining the structures. In addition, when the seacaves/notches and upper bluff eventually collapse, the underpinning system would be exposed to view, which is a less desirable visual condition than the relatively low-scale proposed seacave/notch infill. The eventual exposure of the underpinning, in this case, would be inconsistent with Coastal Act section 30253, as it would alter the natural landform of the bluff and would essentially create an upper bluff wall.

Another alternative is a smaller coastal structure. Unlike previous requests for notch infills in Solana Beach, such as CDP No. 6-15-1988/Monroe and Sloan, the proposed infill will be fairly small in scope. As proposed, the new project will be one of the shallowest and lowest in height infills placed on the bluff face in Solana Beach (See Exhibit 6). When compared to the 90-foot long, 2- to 11-foot deep, 7- to 17-foot high infill proposed in Monroe & Sloan, the 75-foot, 1- to 4-foot deep, 3- to 6-foot high infill currently proposed is significantly smaller in scope. The Commission's coastal engineer has reviewed the project and believes that proposed project is the minimum length needed to support the overhang and help prevent bluff collapse from a large bluff failure.

In summary, the subject project is a relatively small notch fill, and as such, allowing the placement of erodible concrete at this time is likely to forestall the need more impactful alternatives such as a seawall or riprap. The proposed repair and maintenance to the seacaves will reduce the encroachment on the beach consistent with the original permit. Therefore, **Special Condition #1** requires the applicant to submit final plans consistent with the preliminary plans. As conditioned, the infill is the minimal amount of development needed to address the risk from collapse of the notch.

Erodibility Testing

As noted, in order to minimize and avoid impacts to sand supply, the proposed seacave/notch fills have been designed to erode at a rate similar to the natural bluff face. In past erodible concrete seacave infill projects, objections have been raised that erodible concrete does not always erode at the same rate as the surrounding natural bluffs. If the concrete does not erode, or is not regularly removed, it functions much as a traditional seawall would; fixing the back of the beach, and eventually blocking sandy beach area that would otherwise be available for public access and recreation.

The 5 existing concrete infills have not eroded at the same rate as the adjacent natural bluffs, as was expected when the project was approved in 1996, and thus, the concrete fill currently extends seaward of the surface of the natural bluff face. The major reason the 2016 amendment for the same project was denied was concern that the proposed fill material would not erode consistent with the surrounding natural bluffs, and thus that the fill would instead function as a de facto seawall, with potentially all of the sand supply, public access, and visual impacts of a seawall, without any offsetting mitigation.

However, the concrete proposed to be used for the subject project has significantly different mix properties than the material used in 1996, the conditions specifying the properties of the erodible concrete are more specific, and the testing protocols that will be used for the proposed project are more rigorous than those proposed in the 2016 amendment request. The unconfined compressive strength of concrete, measured as pounds per square inch (PSI), is normally a design specification to ensure that the material strength will be adequate from its safe use in the proposed application. Strengths are normally specified as the minimum strength that shall be obtained by the concrete following a 28-day curing period. As a reference, standard shotcrete seawalls (such as those seen elsewhere in Solana Beach) typically have a rating of about 3,000 PSI. With erodible concrete infills, the intent is to set a maximum strength ceiling, which is the opposite of most design specifications.

In staff's 2016 recommendation, the applicant was required to provide a "formulation for erodible concrete that has a final unconfined compressive strength that is no stronger than 120 percent of the unconfined compressive strength of the native sandstone. The method used to determine erodibility and the results of the testing shall be approved, in writing, as an acceptable method by the Executive Director of the Commission." The current proposal is more detailed and includes a specific test to determine the strength of the material. The applicant's engineer has provided the proposed erodible concrete mix ratio for Commission review (Ref: Sheet 2 of Project Plans dated 12/31/17). The mix proposed for the erodible concrete is 200 pounds of Type II/V Portland Cement, along with 180 pounds of Type F fly ash, 2,800 pounds of concrete sand and about 425 pounds of water. The applicant's engineer has stated that after 28 days, the anticipated unconfined compressive strength for the erodible mix design will be about 375 pounds per square inch (PSI) with some variations. The mix would be deemed to be in non-compliance with the appropriate standards if it exceeds 500 PSI. The Commission's engineer has reviewed the proposed material specifications and concurs that the proposed erodible concrete seacave/notch infills should erode at a comparable rate as the adjacent natural bluff.

Unlike the 2016 proposal, the subject project further includes, and conditions require, vigorous testing protocols before, during, and after application. To ensure that the concrete used to fill the notch meets the erodibility requirements, an inspector paid for by the applicant will be present at the plant when the concrete is prepared to confirm the concrete and materials are handled, batched, and mixed in accordance with the specified formulation (Ref. Sheet 2 of the project plans). An inspector will be present at the job site to collect concrete samples and to fabricate the concrete test cylinders for compressive strength testing to be performed by a City of San Diego approved testing and inspection agency (the project location is the City of Solana Beach, but the City of San Diego has a list of such agencies). A minimum of 4 concrete cylinders will be sampled from each ready-mix truck. Unlike the 2016 proposal, which required for testing after 14 days, the 28-day curing period will allow an evaluation of the "final" strength of the concrete. Following the 28-day curing period, the unconfined compressive strength of all the concrete samples shall be determined and the results of which will be provided to the owner and Coastal Commission staff. Again, any mixture above the maximum PSI (500 PSI) will be deemed non-compliant. This approach

provides the Commission with more reliability regarding the erodibility of the material than the Commission had when this project was denied in 2016. **Special Condition #2** requires the above requirements and protocols be implemented.

Furthermore, unlike the 2016 permit, **Special Condition #2** requires that if any of the unconfined compressive strength tests exceed 500 PSI, then the applicant shall apply to the Commission for a permit or permit amendment to remove all of the new infill material and replace it with erodible concrete that meets the erodibility requirements of less than 500 PSI. Only if the Executive Director determines that removal and replacement of all or some of the infill would damage or cause instability to the natural bluff material, can any of the material be retained. In that case, the applicant must apply to the Commission for an amendment to this CDP to retain the non-erodible mix, and propose mitigation to offset the impacts of the non-erodible concrete. Thus, the current project's removal and testing conditions are more stringent than those previously recommended for CDP No. 6-96-102-A2.

Finally, in case the mixture proposed herein does not perform as expected, **Special Condition #3** of this permit also requires regular monitoring and maintenance of the seacave/notch infills. If monitoring determines that any portion of the infill encroaches more than 6 inches seaward of the adjacent bluff, the applicant is responsible to obtain the necessary permits to remove those portions. Thus, even if in the future the erodible concrete does not erode at a comparable rate as the adjacent bluff, the encroaching portions of the infill must be removed so that the infill does not encroach seaward of the dripline of the bluff or seaward of the stringline of the adjacent natural bluff on either side of each infill.

Special Condition #2 of CDP No. 6-96-102, which is still in effect, requires the applicant to submit a monitoring report at 5-year intervals following the last report. The next monitoring report was due May 1, 2018, but provided early on January 5, 2018. However, **Special Condition #3** of this permit, which requires submittal of a report to the Executive Director of the Coastal Commission on June 1st every two years for a six-year period beginning after completion of construction. Submission of this report will serve to satisfy the on-going requirements of Special Condition #2 of CDP No. 6-96-102.

The required annual monitoring reports are a critical part of the Commission's assessment of the effectiveness of erodible concrete in preventing catastrophic bluff collapse and allowing a gradual retreat to continue. Although it is possible to evaluate the condition of existing infills at any given time, without annual data it is difficult to understand exactly how the infills perform on a gradual versus episodic basis. Without evidence that the infills are eroding, the conclusion that they are *not* eroding should be assumed by the applicant. In such a case, the applicant must then return to the Commission to authorize the permanent shoreline protection, including any necessary mitigation associated with such protection.

Thus, **Special Condition #4** notifies the applicant if the monitoring reports required by **Special Condition #3** are not submitted by the deadline, the permittee must apply for a coastal development permit or amendment within 3 months of the Executive Director's

determination, or within 3 months of the date a monitoring report submittal requirement is not satisfied, (whichever is applicable) to evaluate and mitigate for any impacts of the project as permanent shoreline protection that have not been previously addressed. The application must include an analysis of the feasibility of removing all or portions of the fill, and methods of calculating mitigation fees for impacts to sand supply and public access and recreation.

Failure to provide the required monitoring reports per **Special Condition #3** shall result in a conclusive presumption that the infill has fixed the back of the beach, and thus is permanent protection, and the permittee shall accordingly apply for a coastal development permit or amendment as described

Furthermore, because non-erodible shoreline protection has impacts on public access, failure to submit a monitoring report required pursuant to **Special Condition #3** (or follow up coastal development permit or amendment when required) will constitute a violation of public access provisions of the Coastal Act and, thus, the applicant will be subject to civil penalties pursuant to Section 30821 of the Coastal Act commencing from the date a deadline to submit a monitoring report or amendment is not met.

Special Condition #9 requires the permittee to maintain the seacave/notch infills in their approved state, and also requires that if at any time after project completion, any portion of the proposed seacave/notch infill is found to extend seaward of the face of the natural bluff by more than six inches in any location, or the stringline of the adjacent natural bluff on either side of each infill, the applicant must shall obtain and implement a coastal development permit or amendment to remove or remedy the excess infill such that no portion of the infill remains seaward of the drip line. Minor re-grouting or exempt maintenance as allowed by Section 13252 of Title 14, the California Code of Regulations (e.g., restoring color, texture, etc.) does not require an additional coastal development permit or amendment. However, whenever changes or maintenance on the seacave/notch is proposed, the applicant must contact the Commission office to determine whether permits are necessary. Thus, the Commission can be assured that, as conditioned, the infill will be properly maintained and will erode or be physically removed at the same rate as the adjacent bluff and that any adverse impacts to shoreline processes have been or will be avoided, minimized, or mitigated.

Although the Commission finds that the seacave/notch infills have been designed to minimize the risks associated with its implementation, the Commission also recognizes the inherent risk of shoreline development. The seacave/notch infills will be subject to wave action and will be at or landward of the drip line of the eroding bluff above the infill. Thus, there is a risk of bluff failure during and after the construction of the notch infill and the removal of protruding portions of the existing infills. In addition, there is a risk of damage to the seacave/notch infills or damage to property as a result of wave action on the seacave/notch infills. Given that the applicant has chosen to construct the infills despite these risks, the applicant must assume the risks. Accordingly, **Special Condition #10** requires that the applicant assume these risks and waive any claim of damage or liability against the Commission for approval of this application. To ensure that future property owners are properly informed regarding the terms and conditions of

this approval, **Special Condition #6** requires a deed restriction to be recorded against the properties involved in the application.

Section 30253 requires that new development be independently stable and safe and not require the construction of protective devices that alter the natural landform of the bluffs. In addition, Policy 4.18 of the City's approved LUP requires that existing legally permitted bluff retention devices not be factored into setback calculations for new development or redevelopment of bluff-top properties. Such future development must be located in an area where the development is consistent with Coastal Act and/or applicable LCP requirements regarding geologic safety and protection from hazards as if the protection did not exist, including whatever remains of the erodible concrete notch fills. Thus, **Special Condition #12** prohibits future development and redevelopment of the bluff top site from relying on the proposed shoreline protection for stability.

Special Condition #12 also defines "redevelopment" pursuant to the City's LUP. As quoted above, this includes 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, and foundation) 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 applicant 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 applicant was to come back for a subsequent CDP to modify an additional 10% of the exterior walls (50% total) or an additional 20% of the roof structure, (50% total) 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, relative to the initial floor area, would result in a cumulative 50% increase in floor area, and would thus constitute redevelopment.

Conclusion

In summary, given the amount of coastal erosion that has occurred in the area over the last several years, Solana Beach is currently faced with how to protect bluff top homes from erosion while minimizing or avoiding impacts to public coastal resources. The subject site is an area where preventive measures such as the subject seacave and notch infills represent a feasible alternative to a seawall. The project is distinguishable from previous requests for notch infills in Solana Beach, such as Monroe & Sloan, because it is a smaller scale development. Additionally, the Commission's engineer has determined that the proposed mixture can be expected to erode that reasonably mimics the natural retreat rates of the surrounding bluffs. Unlike the project proposed in CDP No. 6-96-102-A2, inspectors will be supervising the entire process and taking multiple samples of the mixture to ensure the UCS of the infill does not exceed 500 PSI. Conditions are imposed in this permit that requires removal and replacement of the infill material if the threshold

of 500 PSI is surpassed for any one sample. These extra measures provide an extra level of assurance that the material will erode at a similar rate as the natural bluff.

The proposed project will delay or prevent the subject seacaves/notches from collapsing, which could result in eventual damage to the existing bluff-top structures. In addition, as infill of the notch/seacaves will reduce the potential for a significant bluff failure, the applicant, the City and the region as a whole will have more time to pursue other non-structural methods, such as beach replenishment and moving the line of bluff-top development landward away from the bluff edge, to protect the bluffs and delay the need for more substantial shoreline protection. Special Conditions have been designed to provide a reasonably high degree of certainty that the erodible concrete will erode as designed, and required on-going maintenance will ensure that the protection does not function as a seawall. Therefore, the Commission finds that approval of the proposed seacave/notch infills is consistent with the long-term goals of Sections 30235 and 30253 of the Coastal Act regarding the protection of natural shoreline processes, natural landforms and local shoreline sand supply.

C. VISUAL RESOURCES

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 guidance regarding the protection of coastal zone visual resources:

> ***Policy 4.30****: 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 4.38****: 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.*

The proposed development is located on the face of a coastal bluff at or landward of the drip line and at or near the same level as the existing sandy beach. Seacaves and notch infills have been a fairly prominent feature of the shoreline in this area, and filling the notch overhang will alter the natural appearance of the bluffs. Matching infill material to the appearance of natural bluffs can be a challenging process and it can be difficult to tell at the time of application how well the infill material will blend into the surrounding natural bluffs. Another difficulty is that weathering can change the appearance of the seacave/notch infills. Thus, even if the infill matches the natural bluffs at the outset, several years later there may be a distinct difference in appearances. Furthermore, the erodible concrete mix proposed by the applicant can be more difficult to treat aesthetically than full strength concrete, due to the nature of erodible concrete. However, past erodible concrete infills constructed in Solana Beach have been aesthetically treated to reasonably match the appearance of the adjacent bluffs (Ref: 6-99-095/City of Solana Beach; 6-00-066/Pierce et. al.; 6-99-103/Coastal Preservation Association; 6-99-091/Becker) and the treatment has not deteriorated.

In addition, because the concrete used to fill the existing caves did not properly erode, it now encroaches on the beach in an unnatural manner. The proposed removal of concrete that protrudes beyond the bluff face and the treatment of the face of the seacaves is expected to result in an improved, more natural appearance.

Special Condition #1 requires the applicant to submit final plans of the method chosen to color and texturize the infill material, with a color board indicating the color of the infill material. **Special Conditions #3 and #9** require the applicant to monitor and maintain the color of the infill to ensure the material continues to blend in with the surrounding bluffs in the future. **Special Condition #8** also addresses this concern and requires the

applicant to submit as-built plans within 60 days of construction of the proposed development to assure the infill has been constructed according to the approved plans.

There are numerous seacave and notch infills along the bluffs in Solana Beach. These infills, while mostly visible, are relatively inconspicuous and do not represent a significant visual blight. In addition, at times when the sand levels are high, these infills are less visible. Seacave and notch infills are considerably less visually prominent and have less public access impacts than traditional seawall projects or riprap revetments. Thus, although the project will alter the natural appearance of the bluffs, the project has been designed and conditioned to match the surrounding natural bluffs to the maximum extent feasible, thereby reducing potential negative visual impacts to the extent feasible. Therefore, the Commission finds that the subject development is consistent with the visual resource and recreation policies of the Coastal Act.

D. PUBLIC ACCESS

Pursuant to Section 30604(c), the Coastal Act emphasizes the need to protect public recreational opportunities and to provide public access to and along the coast. Coastal Act Sections 30210, 30211, 30212, 30212.5, and 30221 require that public access and use of the coast shall be maximized, 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.

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 certified City of Solana Beach Land Use Plan (LUP) language provides additional guidance regarding mitigation for erodible concrete seacave/notch infills:

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

- *Infill/Bluff Stabilization – Seacave/Notch Infill (See Appendix B Figure 1A) – This first solution is designed to address sea caves and undercut portions of the lower dense sandstone bluff where the clean sand lens is not yet exposed. If left uncorrected, the sea cave/undercut will eventually lead to block failures of the lower sandstone, exposure of the clean sand lens and landward bluff retreat. This failure exposes the clean sand lens of the upper bluff terrace deposits triggering rapid erosion and landward retreat of the upper bluff, which eventually endangers the structures at the top of the bluff. If treated at this stage, the Bluff Retention Device will minimize the need for a future higher seawall and future upper bluff repair. This alternative is not designed as a structural wall, is not reinforced, does not include tiebacks, and uses only erodible concrete which shall erode at the same erosion rate as the surrounding natural bluff material. The infill is required to maintain a textured and colored face mimicking the existing bluff material.* ***Erodible concrete seacave/notch infills are designed to erode with the natural bluff and, when maintained to do so, are not subject to the sand supply mitigation, public access and recreation mitigation, encroachment/removal agreement, or authorization timeline policies of the LUP.*** [Emphasis Added]

The subject project is located on the public bluff formation directly adjacent to a public beach. The mean high tide line is located at the toe of the bluff. Although public lateral access is available along the entire stretch of coastline in this area, vertical access is

available only at a limited number of public accessways. The site is approximately 0.3 miles north of the City's main beach accessway at Fletcher Cove.

Consistent with the requirement of the original permit, the subject project will remove portion of the existing seacave fill located beyond the face of the bluff, removing these minor impediments to public access and recreation.

Shoreline protection projects have the potential to impact existing lateral access along the beach. Structures that fix the back of the beach stop the landward migration of the beach profile while the seaward edge continues to erode, thereby reducing the amount of dry sandy beach available to the public. However, the proposed new notch infill project has been designed to erode at a comparable rate to natural bluff and is not predicted to impact available beach area in the future. The Commission has not typically required the payment of funds to mitigate for the public access and recreation impacts of erodible concrete seacaves in Solana Beach, because they do not have the same type of adverse impacts that other types of shoreline armoring do, as described above. Thus, the Solana Beach LUP does not require sand supply or public access and recreation mitigation for erodible concrete seacave/notch infills when properly designed and maintained. (However, prior to approval of the LUP, in 2000, the Commission did accept a mitigation fee of $21,153 offered by the previous property owners to mitigate non-specific impacts to sand supply, resulting from a seacave infill located on the subject site (CDP #6-00-066/Monroe & Pierce).

If not properly constructed and maintained, seacave/notch infills can have an adverse impact on coastal resources and may fix the back of the beach. As described above, special conditions require monitoring of the infills to make sure they are eroding as designed, and removal of any portion of the fill that does not erode. Furthermore, if monitoring reveals that the seacave/notch infills have fixed the back of the beach (either as a result of the concrete not eroding or through lack of maintenance) and thus resulted in similar impacts to sand supply and public access as a seawall, **Special Condition #3** requires that within three months of submission of the monitoring report, the applicant must submit a complete CDP application to the Commission to mitigate for any unmitigated impacts. Required mitigation may include sand supply replacement, public access and recreation mitigation, an encroachment agreement with the City, and/or enactment of the authorization timeline policies of the LUP that would require the proposed seacave/notch infills be authorized only so long as they may be required to protect the existing bluff top structures.

Special Condition #3 ensures that regular monitoring will be conducted and that if any portion of the new notch infill does not erode landward, as designed, and encroaches onto the public beach, that the encroaching portions will be removed. These conditions are necessary to ensure that the notch infill does not encroach onto the public beach in the future.

The beach area fronting the subject site is a public resource, and thus, the protection of beach along the toe of the bluff is important to maintain access. This stretch of beach has historically been used by the public for access and recreation purposes. **Special**

Condition #11 acknowledges that the issuance of this permit does not waive the public rights that exist on the property. The use of the beach or public parking areas for the staging of construction materials and equipment also adversely impacts the public's ability to gain access to the beach. As proposed, all vehicles and equipment for the project will enter and exit through Fletcher Cove but no equipment or supplies will be stored or parked in Fletcher Cove or on the beach. **Special Condition #5** prohibits the applicant from storing vehicles on the beach overnight, using any public parking spaces within the Fletcher Cove Parking Lot for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach or in the parking lot. **Special Condition #5** also prohibits construction on the sandy beach during weekends and holidays throughout the year, or between Memorial Day to Labor Day of any year. Therefore, as conditioned, the Commission finds that the subject proposal will not result in any significant adverse impacts on beach access or public recreation consistent with Sections 30210, 30211, 30212.5, 30221, 30223 and 30252, pursuant to Section 30604(c) of the Coastal Act.

E. UNPERMITTED DEVELOPMENT

Violations of the Coastal Act exist on the subject property including, but not limited to, non-compliance to Special Condition No. 2 of CDP No. 6-96-102 that required the applicant to submit monitoring reports on an annual basis for the first three years of the project by May 1 (beginning the first season after construction of the project was completed). After the first three years, the reports were to be submitted at 5-year intervals following the last report. The applicant submitted monitoring reports in compliance with the condition for 1998, 1999, 2000, and 2005. A monitoring report for 2010 was not submitted pursuant to Special Condition #2 of CDP No. 6-96-102. Subsequent monitoring reports were submitted in 2013 and 2018. There was a 3-year period of noncompliance with Special Condition No. 2 of CDP No. 6-96-102 from 2010 to 2013.

The current permit requires the applicant to submit a monitoring report, prepared by a licensed geologist or geotechnical engineer, to the Executive Director of the Coastal Commission on June 1st every two years for a six-year period beginning after completion of construction. Special Condition No. 2 of CDP No. 6-96-102 is still in effect and requires compliance through the submittal of monitoring reports, but this condition may be satisfied by complying with Special Condition #3 of this permit. Compliance with all of the terms and conditions of both permits will bring the applicant into compliance with the aforementioned violations of the Coastal Act on the subject property going forward.

To ensure that the matter of unpermitted development (the concrete extending onto the beach) is resolved in a timely manner, **Special Condition #13** requires that the applicant satisfies **Special Condition #6** within 180 days and all other prior-to-issuance conditions of this permit within 60 days of Commission action, or within such additional time as the Executive Director may grant for good cause. The two time frames acknowledging the recordation and Executive Director review of a deed restriction (Special Condition #6)

can be time-consuming, but all other conditions should be complied with promptly, to allow removal of the encroachment as soon as feasible.

Although development has taken place prior to submission of this permit application, consideration of this application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations, nor does it constitute an implied statement of the Commission's position regarding the legality of development, other than the development addressed herein, undertaken on the subject site without a coastal permit.

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 Commission has certified the City's Local Coastal Program Land Use Plan, but the City has not yet completed, nor has the Commission reviewed any implementing ordinances. Thus, the City's LCP is not fully certified, and Chapter 3 of the Coastal Act is the standard of review. However, as cited above, the certified LUP contains provisions relating to shoreline protection including policies related to erodible concrete seacave/notch infills. The LUP establishes that erodible concrete seacave/notch infills, when maintained properly, are not subject to the sand supply mitigation, public access and recreation mitigation, encroachment removal agreement, or authorization timeline policies of the LUP. The location of the proposed infills is designated for Open Space Recreation in the City of Solana Beach LUP. The project, as conditioned, supports recreation as it prevents impacts to the beach.

As conditioned, the subject development is consistent with the land use designation and the shoreline protection policies of the LUP. 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 pre-emptive notch fill has been documented and identified coastal resource impacts will be mitigated. Therefore, 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.

G. CONSISTENCY WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA).

Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a

proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. The City Council of the City of Solana Beach found that the proposed development was exempt from CEQA pursuant to State CEQA guidelines sections 15301(d) (Existing Facilities) and 15304(c) (Minor Alterations to Land).

As conditioned, 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).

(G:\Reports\2017\6-17-0819 Solana Beach and Tennis Club sft rpt.docx)

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

- City of Solana Beach certified LUP
- City of Solana Beach General Plan and Zoning Ordinance
- City of Solana Beach City Council Resolution 2015-094
- Infill Monitoring Report prepared by TerraCosta (Dec 2013)
- Geotechnical Report prepared by TerraCosta (Jan 2018)
- CDP No. 6-96-102