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

W20a

Appeal Filed:	5/25/16
Action Deadline:	None
Staff:	E. Stevens-SD
Staff Report:	7/27/2018
Hearing Date:	8/8/2018

STAFF REPORT: DE NOVO HEARING

Application No.:	**A-6-ENC-16-0060**
Applicant:	**Gary and Bella Martin**
Agent:	Matthew Peterson
Location:	444 Neptune Avenue, Encinitas, San Diego County (APN #256-282-21)
Project Description:	Consolidation of two existing legal lots into one lot and construction of a new, 2-story, 3,110 sq. ft. home over a 969 sq. ft. basement with a 644 sq. ft. attached garage on an 11,394 sq. ft. vacant blufftop lot.
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

Staff is recommending approval of the project, with a redesign requiring that the new structure be located 79 feet back from the edge of the bluff, without a basement. As proposed, the new home and basement would be located approximately 40 feet from the edge of a 93-ft. high unarmored coastal bluff and the second floor is proposed to cantilever approximately 32 feet away from the bluff edge. The basement is proposed to provide the foundation for the house, where the finished floor elevation would be approximately 10 feet below existing grade. The Commission's staff geologist and staff engineer have reviewed the project and determined that the 40-ft. setback approved by the City is inconsistent with the LCP requirements that the home be sited in a location that will protect the home from

failure and erosion hazards so as not to require shoreline protection throughout the life span of the project.

The location where new development must be sited so that it will neither be subject to nor contribute to significant geologic instability throughout the life span of the project (a period of 75 years) is known as the Geologic Setback Line (GSL). To find the GSL, the City's LCP requires that geotechnical analysis cover all types of slope failure and demonstrate a factor of safety of 1.5 (the industry-standard for new development for geologic stability against landsliding) be maintained throughout the 75-year project life. The City interprets this requirement to mean that the GSL should either be the setback needed to achieve a factor of safety of 1.5 today OR the expected bluff retreat over the next 75 years, whichever is greater, but not less than the City's minimum 40-ft. coastal bluff setback. Thus, the City approved the project with a 40-foot setback. However, the Commission's technical staff have determined that the City's interpretation would result in a significant underestimate of the GSL and does not ensure that a 1.5 factor of safety will be maintained over the economic life of the development, because if the development is only set back at the distance necessary to achieve a 1.5 factor of safety today, then *any* future bluff retreat would immediately reduce its stability below the factor of safety of 1.5, and could lead to a request for shoreline protection to stabilize the structure. Thus, the appropriate way to determine the GSL is to find the distance from the bluff edge necessary to achieve a factor of safety of 1.5 today and add to that the expected bluff retreat over the next 75 years.

Commission staff have worked extensively with the project applicant regarding the appropriate method of calculating the factor of safety and the erosion rate for the site. Staff agrees with the applicant and the City that for the subject site, the 1.5 factor of safety occurs 40 feet back from the bluff edge. With regard to the erosion rate, the applicants' geotechnical consultants have estimated an historic erosion rate of 0.20 ft. /yr., which they increased to 0.27 ft. /yr. to account for sea level rise, which is expected to increase the rate of bluff erosion over time (20.25 ft. over 75 years). The applicants contend that their geotechnical report determination of 0.27 ft. /yr. is based on interpretation of site-specific available historic photographs and surveys, as well as consideration of uncertainties and the effects of sea level rise. After a thorough analysis of the applicant's evidence, the Commission geologist and engineer determined that on the subject site, the historic rate of erosion is appropriately estimated to be 0.20 ft. /yr. However, the Commission geologist and engineer disagree that increasing the erosion rate to only 0.27 ft. /yr. will adequately account for the likely acceleration of bluff retreat rates in the future due to sea level rise consistent with LCP policies that require the appropriate coastal setback not result in risk to the principal structure within its economic life, taking into consideration engineering evidence.

Instead, staff supports the use of the SCAPE Method, which is a site specific erosion rate estimation method that incorporates sea level rise predictions. The SCAPE method results in an expected 0.52 ft. /yr. erosion rate (39 ft. over 75 years). Thus, based on the 40-ft. setback needed to achieve a factor of safety of 1.5 and the 39-ft. setback needed to accommodate 75 years of bluff retreat, new development must be set back 79 feet from the bluff edge. A memorandum by the Commission geologist and engineer, which describes the calculation of the appropriate setback for the subject site in greater detail, is

attached as Exhibit 9. This approach to estimating the effects of sea level rise is the best available science relevant to the subject project, and is consistent with the Commission's recently adopted Sea Level Rise Guidance.

Although the recommended 79 ft. setback and a prohibition on construction of a basement would not allow the applicant to construct the proposed ~4,700 sq. ft. home (including the garage), it would allow sufficient area on the site to build a reasonably sized home that would assure stability for 75 years without relying on new bluff or shoreline protection measures and be consistent with the hazard policies of the LCP. With this setback, the applicants could construct an approximately 1,434 sq. ft. 2-story home (including garage area) on the ~45 ft. by 120 ft. blufftop portion of the parcel. This estimated home size includes a 25 ft. front yard setback, 5 and 10 ft. side yard setbacks, and allowance for a cantilevered second floor area 15.8 ft. seaward of the 79 ft. GSL setback. The size of the home could be significantly increased with a variance from the City that allowed the required 25 ft. front yard setback to be reduced. Specifically, a 10 ft. front yard setback would allow for a 2,334 sq. ft. home and a 0 ft. front yard setback would allow for a 2,934 sq. ft. home.

The applicant has suggested that this size home is inconsistent with the character of the neighborhood. Based on analysis of square footage listed on the website www.zillow.com on March 21, 2017 for 16 homes on the same block and side of Neptune Avenue, the average home has a floor area of approximately 2,557 sq. ft. In the example where this site receives a variance for a 10 ft. front yard setback from the City, the resulting potential is for a 2,334 sq. ft. house, which would be comparable to the average square footage of existing homes located along this coastal bluff. Given the hazardous location, the City should strongly support the granting of reduced front yard setbacks which would allow homes to be sited more safely.

It may be that redeveloping some bluff top properties in Encinitas will require building homes smaller than existing surrounding homes in order to meet the geologic setback requirements. It is important that new development acknowledge changing circumstances that may require revisions to historic patterns of development, whether that means designing for increased storms and flooding, or accommodating sea level rise. But on the subject site, there is a building envelope that allows the applicant enough room and flexibility, taking into consideration the City's required side yard setbacks, to design a home with reasonable articulation and design at similar bulk and scale to surrounding development.

Special Condition #1 requires the submission of revised final plans that conform to a 79-ft. setback for the home and prohibits construction of a basement. A basement on the blufftop lot is inconsistent with the LCP policy requiring that all new construction shall be specifically designed and constructed such that it could be removed in the event of endangerment. Moreover, removal of a basement would significantly alter the bluff's natural state, inconsistent with another LCP policy encouraging the City to retain coastal bluffs as a scenic resource and to minimize geologic hazards. Furthermore, basements have the potential to impact the natural erosional processes of coastal bluffs and in some instances function as de facto upper bluff shoreline armoring.

In addition, new development may be approved only if the Commission can be assured it will not result in having to propose any shore or bluff stabilization to protect the structure in the future. Special Condition #3 requires the applicant to waive any rights to construct shoreline armoring in the future to protect the new home and requires the applicants to acknowledge that the development must be removed if threatened with damage or destruction from waves, erosion, storm conditions, bluff retreat, landslides, or other natural hazards in the future. Special Condition #4 requires that the applicant submit an amendment to this CDP to remove any cantilevered portions of the home if a portion ever becomes located seaward of the bluff edge as a result of future erosion. Special Condition #5 requires that the applicant assumes the risks associated with development in a hazardous location.

The precedential value of the local government's decision for future interpretations of its LCP is particularly important with this project. The Commission also recently found Substantial Issue for two projects involving demolition of existing blufftop homes and construction of new blufftop homes in Encinitas (6-ENC-16-0619/Hurst and 6-ENC-16-0624/Meardon) that similarly did not fully assess geologic stability factors over 75 years. The potential for bluff failure and erosion must be accurately and fully evaluated, to avoid siting additional new development in hazardous locations, where it would likely need shoreline protection in the future.

Therefore, Commission staff recommends **approval** of coastal development permit application A-6-ENC-16-0060, as conditioned.

Standard of Review: Certified City of Encinitas Local Coastal Program and the public access and recreation policies of Chapter 3 of the Coastal Act.

STAFF NOTES

On May 25, 2016, the project was appealed to the Coastal Commission and at its July 13, 2016 hearing, the Commission found Substantial Issue exists with respect to the grounds on which the appeal was filed. On December 19, 2016, Dr. Benumof, retained by the applicants, met with the Commission's staff geologist to discuss the site-specific erosion rate for the subject site. On January 27, 2017, Dr. Benumof provided the Commission's staff geologist with an addendum to the geotechnical report dated January 19, 2017 and his independent review of the addendum dated January 26, 2017. Since the Commission's staff geologist resigned in February 2017, these submitted materials were then routed to the Commission's staff engineer and project analyst.

While staff reviewed this new information, it became clear that a local San Diego hearing was the most desirable to afford interested parties the opportunity to attend the hearing. However, with the cancellation of the April hearing, there was not room in the agenda for the project to be scheduled at the May hearing in San Diego. Given the applicants' request to bring the application to the Commission in a timely manner, staff targeted the next possible Southern California hearing scheduled for August. On July 5, 2017, staff had a phone call with the applicants' representative to describe the staff recommendation. On July 18, 2017,

the applicants' representative emailed staff to request that the application not be on the August hearing agenda so that the applicants' geotechnical team could provide draft responses to staff's recommendation. On July 31, 2017, staff participated in a conference call with the applicants' representatives. On August 3, 2017, as a follow-up to the conference call, staff emailed the applicant's representatives a draft geotechnical memo. On September 27, 2017, the applicants provided a geotechnical response to the draft staff recommendation (GSI's response dated Sept. 21, 2017 and Dr. Benumof's response dated Sept. 27, 2017). On January 30, 2018, staff emailed the applicants' representative a revised draft recommendation for the subject project. On March 20, 2018, staff met with the applicants and their representatives to discuss the draft staff recommendation. On June 1, 2018, Dr. Joseph Street assumed the position of Commission geologist. Due to the fact that the applicant had submitted at least 10 geotechnical reports and geotechnical memoranda related to the property during the permitting process, staff determined that it was appropriate to agendize the item once Dr. Street had an opportunity to review the submitted geologic material. In addition to prioritizing review of the submitted information, Dr. Street also met with Dr. Benumof on June 5, 2018 to discuss the project.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

I move that the Commission ***approve*** *Coastal Development Permit Application No.* A-6-ENC-16-0060 *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 A-6-ENC-16-0060 *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. **Revised Final Plans.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit for review and written approval of the Executive Director, revised final plans in substantial conformance with the submitted plans dated March 24, 2016 by Stephanie Lupton. The revised final plans shall be approved by the City of Encinitas and include the following:

   a) The foundation of the proposed home shall be located at least 79 feet landward of the existing bluff edge of the site.

   b) The residence may include a reduced front yard setback, if approved pursuant to a variance from the City of Encinitas. The variance shall be submitted to the Executive Director for review and approval. No amendment to the subject permit would be required for a project revision that includes relocating or expanding the structure to accommodate a reduced front yard setback, consistent with all other policies of the certified LCP including height, density, and public view corridors.

   c) A basement is prohibited.

   d) The proposed development including foundations shall be designed to facilitate removal and/or relocation of the structure and its foundation in the future, in the event of endangerment of the residential structure.

   e) All grading and excavation shall be prohibited within 40 feet of the existing bluff edge.

   f) All runoff from impervious surfaces on the top of the bluff shall be collected and directed away from the bluff edge towards the street.

   The applicants 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 amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. **Revised Landscape Plans.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, final landscaping and fence plans approved by the City of Encinitas. The landscaping and fence plans shall include the following:

   a) A view corridor a minimum of 5 feet wide shall be created in the north and south side yards of the subject site. All proposed landscaping in this yard area shall be maintained at a height of 3 feet or lower (including raised planters) to preserve views from the street toward the ocean. All landscape materials within the identified side yard setbacks shall be species with a growth potential not to exceed 3 feet at maturity.

   b) All fencing or gates within the side yard setbacks shall permit public views and have at least 75 percent of its surface area open to light.

   c) All landscaping shall be drought-tolerant and native or non-invasive plant species. No plant species listed as problematic or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, may be employed or allowed to naturalize or persist on the site. No plant species listed as noxious weed by the State of California or the U.S. Federal Government may be utilized within the property.

   d) New permanent irrigation systems on the blufftop property are prohibited.

   e) A written commitment by the applicants that, five years from the date of the issuance of the coastal development permit for the residence, the applicants will submit for the review and written approval of the Executive Director, a landscape monitoring report prepared by a licensed Landscape Architect or qualified Resource Specialist, that certifies whether the on-site landscaping is in conformance with the landscape plan approved pursuant to this Special Condition. The monitoring report shall include photographic documentation of plant species and plant coverage.

      If the landscape monitoring report indicates the landscaping is not in conformance with or has failed to meet the performance standards specified in the landscaping plan approved pursuant to this permit, the applicants, or successors in interest, shall submit a revised or supplemental landscape plan for the review and written approval of the Executive Director. The revised landscaping plan must be prepared by a licensed Landscape Architect or Resource Specialist and shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

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

3. **No Future Bluff or Shoreline Protective Device.**

   a) By acceptance of this Permit, the applicants agree, on behalf of themselves and all successors and assigns, that no bluff or shoreline protective device(s) shall ever be constructed to protect the development approved pursuant to Coastal Development Permit No. A-6-ENC-16-0060 including, but not limited to, the residence and foundation, in the event that the development is threatened with damage or destruction from waves, erosion, storm conditions, bluff retreat, landslides, or other natural hazards in the future. By acceptance of this Permit, the applicants hereby waive, on behalf of themselves and all successors and assigns, any rights to construct such devices that may exist under applicable law.

   b) By acceptance of this Permit, the applicants agree, on behalf of themselves and all successors and assigns, that the blufftop residence will remain only as long as it is reasonably safe from failure and erosion without having to propose any shoreline armoring to protect the residence in the future;

   c) By acceptance of this Permit, the applicants agree, on behalf of themselves and all successors and assigns, that the landowner shall remove the development authorized by this Permit, including the residence and foundation, if any government agency has ordered that the structures are not to be occupied due to any of the hazards identified above, or if any government agency requires the structures to be removed. In the event that portions of the development fall to the beach before they are removed, the landowner shall remove all recoverable debris associated with the development from the beach and ocean and lawfully dispose of the material in an approved disposal site. If the site is within the coastal zone, such removal shall require a coastal development permit.

   d) In the event the edge of the bluff recedes to within 10 feet of the blufftop residence, but no government agency has ordered that the structures not be occupied, a geotechnical investigation shall be prepared by a licensed coastal engineer and geologist, retained by the applicants, that addresses whether any portions of the residence are threatened by coastal hazards. The report shall identify all those immediate or potential future measures that could stabilize the blufftop residence without shore or bluff protection, including but not limited to removal or relocation of portions of the residence. The report shall be submitted to the Executive Director and the appropriate local government official. If the geotechnical report concludes that the residence or any portion of the residence is unsafe for occupancy, the applicant shall, within 90 days of submitting the report, apply for a coastal development permit amendment to remedy the hazard, which shall include proposed removal of the threatened portion of the structure.

4. **Monitoring and Future Removal of the Cantilever Portion of Structure.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, a plan prepared by a licensed geologist or geotechnical engineer for a bluff monitoring plan that includes the following:

a) Current measurements of the distance between the cantilevered portion of the home and the bluff edge ("bluff edge" as defined in Section 30.04.010 of the certified Encinitas Implementation Plan), and provisions for these measurements to be taken every five years 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, etc. so that annual measurements can be taken at the same location and comparisons between years can provide information on bluff retreat.

b) Provisions for submittal of a report to the Executive Director of the Coastal Commission on June 1st every five years beginning on the date of Commission approval of this CDP. Each report shall be prepared by a licensed geologist or geotechnical engineer. The report shall contain the measurements and evaluation required by subsection a) 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 and the impact of the cantilevered portion of the home on the natural bluff. The report shall include recommendations on how to remove any cantilevered portion of the home that is seaward of the bluff edge.

c) An agreement that if after inspection, it is apparent that any cantilevered portion of the home is seaward of the bluff edge, the applicants shall apply for a Coastal Development Permit amendment within 90 days of submittal of the monitoring report to remove the cantilevered portion of the home that is located seaward of the bluff edge.

The applicants shall undertake monitoring 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 amendment unless the Executive Director determines that no amendment is legally required.

5. **Assumption of Risk, Waiver of Liability and Indemnity Agreement.** By acceptance of this permit, the applicants acknowledge and agree (i) that the site may be subject to hazards from erosion and coastal bluff collapse; (ii) to assume the risks to the applicants and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

6. **Deed Restriction.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and approval, documentation demonstrating that the landowner has executed and recorded a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property (hereinafter referred to as the "Standard and Special Conditions"); and (2) imposing all Standard and Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the applicants' entire parcel. 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.

7. **Bluff Open Space Deed Restriction.**

   a) No development, as defined in Section 30106 of the Coastal Act, shall occur in the open space area between the bluff edge and the western property line. The western property line is currently located approximately 105 feet seaward of the existing bluff edge. This prohibition on development shall apply to the bluff face as the location of the bluff edge ("bluff edge" as defined in Section 30.04.010 of the certified Encinitas Implementation Plan) changes over time, due to the landward retreat of the bluff edge.

   b) PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall execute and record a deed restriction in a form and content acceptable to the Executive Director, reflecting the above restrictions on development in the designated open space area as generally depicted by Exhibit 10. The recorded document(s) shall include a legal description and corresponding graphic depiction of the legal parcel(s) subject to this permit and a metes and bounds legal description and a corresponding graphic depiction, drawn to scale, of the designated open space area prepared by a licensed surveyor based on an on-site inspection of the open space area.

   c) The deed restriction shall be recorded free of prior liens and any other encumbrances that the Executive Director determines may affect the interest being conveyed.

   d) The deed restriction shall run with the land in favor of the People of the State of California, binding successors and assigns of the applicant or landowner in perpetuity.

8. **Best Management Practices and Construction Responsibilities.** The applicants shall comply with the following construction-related requirements:

   a) All debris resulting from demolition and construction activities shall be removed and disposed of at an authorized disposal site.

   b) Temporary sediment control Best Management Practices (BMPs) such as straw bales, fiber rolls, or silt fencing shall be installed prior to, and maintained throughout, the construction period to intercept and slow or detain runoff from the construction, staging, and storage/stockpile areas, allow entrained sediment and other pollutants to settle and be removed and prevent discharge of sediment and pollutants toward the bluff edge. When no longer required, the temporary sediment control BMPs shall be removed. Fiber rolls shall be 100% biodegradable, and shall be bound with non-plastic biodegradable netting such as jute, sisal, or coir fiber; photodegradable plastic netting is not an acceptable alternative. Rope used to secure fiber rolls shall also be biodegradable, such as sisal or manila.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION/HISTORY

The project approved by the City of Encinitas on April 21, 2016 allows for the consolidation of two existing legal lots (one of which is primarily located on the face of the coastal bluff) into one lot and the construction of a new, 2-story, 3,110 sq. ft. single-family home over a 969 sq. ft. basement with a 644 sq. ft. attached garage on an 11,394 sq. ft. vacant coastal blufftop lot (Exhibit 1). As approved, the basement and first floor would be located approximately 40 feet from the coastal bluff edge and the second floor would cantilever to within 32 feet from the bluff edge. The basement would provide the foundation for the house, where the finished floor elevation would be approximately 10-ft. below existing grade (Exhibit 6).

The subject site is located on the west side of Neptune Avenue and is currently not protected by any shoreline armoring (Exhibit 2) and there is no Commission permit history on the site. On May 25, 2016, the project was appealed to the Coastal Commission (Exhibit 7) and at its July 13, 2016 hearing, the Commission found Substantial Issue exists with respect to the grounds on which the appeal was filed.

Adjacent to the subject site to the north, in April 1994, the Commission approved a 13 ft. high, approximately 105 ft. long seawall to protect an existing home (452 Neptune Ave.; CDP #6-93-136/Favero). The home was built in 1929, before the enactment of California Coastal Act of 1976, and was approximately 22 feet from the bluff edge in 1994. County records document a series of additions to the home (a second story in 1965, a bathroom in 1968, and stairs in 1971). There are no records of more recent improvements to this property.

Adjacent to the subject site to the south, in August 2016, the Commission found the proposed demolition of the existing home built in 1959 and construction of a new home raises a substantial issue, as similar to the subject application, geologic stability factors over 75 years were not fully assessed (438 Neptune Ave.; CDP #6-ENC-16-0624/Meardon). Like the subject property, this adjacent property to the south is currently not protected by any shoreline armoring and there is no other Commission permit history on the site.

In the Commission's "de novo" review of this application, the standard of review is the certified City of Encinitas Local Coastal Program (LCP) and the public access policies of the Coastal Act.

B. GEOLOGIC STABILITY/BLUFFTOP DEVELOPMENT

The project approved by the City is located within the Coastal Bluff Overlay Zone. The pertinent LCP policies are below:

Public Safety Policy 1.3 of the City's Land Use Plan (LUP) requires that:

> *The City will rely on the Coastal Bluff and Hillside/Inland Bluff Overlay Zones to prevent future development or redevelopment that will represent a hazard to its owner or occupants, and which may require structural measures to prevent destructive erosion or collapse.*

Public Safety Policy 1.6 of the City's LUP requires that:

> *The City shall provide for the reduction of unnatural causes of bluff erosion, as detailed in the Zoning Code, by:*
>
> *[…]*
>
> *e. Permitting pursuant to the Coastal Bluff Overlay Zone, bluff repair and erosion control measures on the face and at the top of the bluff that are necessary to repair human-caused damage to the bluff, and to retard erosion which may be caused or accelerated by land-based forces such as surface drainage or ground water seepage, providing that no alteration of the natural character of the bluff shall result from such measures, where such measures are designed to minimize encroachment onto beach areas through an alignment at and parallel to the toe of the coastal bluff, where such measures receive coloring and other exterior treatments and provided that such measures shall be permitted only when required to serve coastal-dependent uses or to protect existing principal structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply; and*

f. Requiring new structures and improvements to existing structures to be set back 25 feet from the inland blufftop edge, and 40 feet from coastal blufftop edge with exceptions to allow a minimum coastal blufftop setback of no less than 25 feet. For all development proposed on coastal blufftops, a site-specific geotechnical report shall be required. The report shall indicate that the coastal setback will not result in risk of foundation damage resulting from bluff erosion or retreat to the principal structure within its economic life and with other engineering evidence to justify the coastal blufftop setback.

[. . .]

In all cases, ***all new construction shall be specifically designed and constructed such that it could be removed in the event of endangerment*** *and the applicants shall agree to participate in any comprehensive plan adopted by the City to address coastal bluff recession and shoreline erosion problems in the City.*

This does not apply to minor structures that do not require a building permit, except that no structures, including walkways, patios, patio covers, cabanas, windscreens, sundecks, lighting standards, walls, temporary accessory buildings not exceeding 200 square feet in area, and similar structures shall be allowed within five feet from the bluff top edge; and

g. Permanently conserving the bluff face within an open space easement or other suitable instrument.

Policy 30.34.20.B.1 of the City's certified Implementation Plan (IP) states, in part:

1. With the following exceptions, no principal structure, accessory structure, facility or improvement shall be constructed, placed or installed within 40 feet of the top edge of the coastal bluff. Exceptions are as follows:

[...]

b. Minor accessory structures and improvements located at grade, including landscaping, shall be allowed to within 5 feet of the top edge of the coastal bluff. Precautions must be taken when placing structures close to the bluff edge to ensure that the integrity of the bluff is not threatened. For the purposes of the Coastal Bluff Overlay Zones, "minor accessory structures and improvements" are defined as those requiring no City approval or permit including a building or grading permit, and not attached to any principal or accessory structure which would require a permit. Grading for reasonable pedestrian access in and around a principal or accessory structure may be permitted by the City Engineer following review of a site specific soils report.

Section 30.34.020(C) of the City's Implementation Plan (IP) states, in part:

> *DEVELOPMENT PROCESSING AND APPROVAL. In addition to findings and processing requirements otherwise applicable, the following establishes specific processing and finding requirements for proposed development within the Coastal Bluff Overlay Zone…*
>
> *1. Development and improvement in compliance with the development standards in paragraph B "Development Standards," proposing no structure or facility on or within 40 feet of the top edge of the coastal bluff (except for minor accessory structures and improvements allowed pursuant to Section 30.34.02(B)1b, and proposing no preemptive measure as defined below, shall be subject to the following: submittal and acceptance of a site-specific soils report and geotechnical review described by paragraph D "Application Submittal Requirements" below. The authorized decision-making authority for the proposal shall make the findings required based on the soils report and geotechnical review for any project approval. A Second Story cantilevered portion of a structure which is demonstrated through standard engineering practices not to create an unnecessary surcharge load upon the bluff area may be permitted 20% beyond the top edge of bluff setback if a finding can be made by the authorized agency that no private or public views would be significantly impacted by the construction of the cantilevered portion of the structure.*

Section 30.34.020(D) of the IP states, in part:

> *APPLICATION SUBMITTAL REQUIREMENTS. Each application to the City for a permit or development approval for property under the Coastal Bluff Overlay Zone shall be accompanied by a soils report, and either a geotechnical review or geotechnical report as specified in paragraph C "Development Processing and Approval" above. Each review/report shall be prepared by a certified engineering geologist who has been pre-qualified as knowledgeable in City standards, coastal engineering and engineering geology. The review/report shall certify that the development proposed will have no adverse effect on the stability of the bluff, will not endanger life or property, and that any proposed structure or facility is expected to be reasonably safe from failure and erosion* ***over its lifetime*** *without having to propose any shore or bluff stabilization to protect the structure in the future [emphasis added]. Each review/report shall consider, describe and analyze the following:*
>
> 1. *Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site;*
>
> 2. *Historic, current and foreseeable cliffs erosion, including investigation or recorded land surveys and tax assessment records in addition to land use of historic maps and photographs where available and possible changes in shore configuration and sand transport;*
>
> 3. *Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features, such as bedding, joints and faults;*

4. Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity;

5. Impact of construction activity on the stability of the site and adjacent area;

6. Ground and surface water conditions and variations, including hydrologic changes caused by the development e.g., introduction of irrigation water to the ground water system; alterations in surface drainage);

7. Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e., landscaping and drainage design);

8. Effects of marine erosion on seacliffs and estimated rate of erosion at the base of the bluff fronting the subject site based on current and historical data;

9. Potential effects of seismic forces resulting from a maximum credible earthquake;

10. Any other factors that might affect slope stability;

11. Mitigation measures and alternative solutions for any potential impacts.

The report shall also express a professional opinion as to whether the project can be designed or located so that it will neither be subject to nor contribute to significant geologic instability ***throughout the life span of the project*** *[emphasis added]. The report shall use a current acceptable engineering stability analysis method and shall also describe the degree of uncertainty of analytical results due to assumptions and unknowns. The degree of analysis required shall be appropriate to the degree of potential risk presented by the site and the proposed project.*

In addition to the above, each geotechnical report shall include identification of the daylight line behind the top of the bluff established by a bluff slope failure plane analysis. This slope failure analysis shall be performed according to geotechnical engineering standards, and shall:

a. Cover all types of slope failure.

b. Demonstrate a safety factor against slope failure of 1.5.

c. Address a time period of analysis of 75 years. *[emphasis added]*

As proposed, the project will include the construction of an approximately 4,700 sq. ft., two-story single family home, including a basement and attached garage, approximately 40 feet from the edge of a 93 ft.-high coastal bluff. Coastal bluffs in Encinitas are subject to a variety of erosive forces and conditions (e.g., wave action, reduction in beach width,

block failures and landslides). As a result, the bluffs and blufftop lots in the Encinitas area are considered a hazardous area. In 1986, the California Division of Mines and Geology mapped the entire Encinitas shoreline as an area susceptible to landslides, i.e., either "Generally Susceptible" or "Most Susceptible Areas" (Open File Report, "Landslide Hazards in the Encinitas Quadrangle, San Diego County, California," dated 1986). The Encinitas shoreline has been the subject of numerous Commission and City approved permits for shoreline armoring. Although the subject site does not currently have shoreline armoring, in 1994 the Commission approved a 13 ft. high, approximately 105 ft. long seawall to protect an existing home adjacent to the subject site to the north (452 Neptune Ave.; CDP #6-93-136) and a 9 ft. high, shotcrete seawall fronting six non-contiguous homes approximately 250 ft. south of the subject site (312, 354, 370, 378, 396, and 402 Neptune Ave.; CDP #6-93-85) (Exhibit 3). Thus, the subject site is clearly in a hazardous location.

As cited above, the LCP contains several policies designed to reduce or avoid risk to new development. Public Safety Policy 1.3 of the LUP prevents new development that will represent a hazard to its occupants and which may require structural measures to prevent destructive erosion or collapse. In addition, Public Safety Policy 1.6 of the LUP and Section 30.34.020(D) of the IP require an applicant to provide extensive geotechnical information documenting that any new development on the coastal blufftop have an appropriate setback to ensure that the residence is reasonably safe from failure and erosion over its lifetime, without having to propose any shore or bluff stabilization to protect the structure in the future.

Safe siting of development is critical not only for the occupants of the development, but also to prevent permanent impacts to coastal resources. The LCP acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods designed to forestall erosion, alter natural landforms and natural shoreline processes, resulting in a variety of negative impacts on coastal resources, including adverse effects on sand supply, public access and recreation, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, including ultimately the loss of the beach.

The location where new development must be sited so that it will neither be subject to nor contribute to significant geologic instability throughout the life span of the project (a period of 75 years) is known as the Geologic Setback Line (GSL). The GSL is determined by combining slope stability analyses with estimated bluff retreat at a site. The factor of safety is an indicator of slope stability, where a value of 1.5 is the industry-standard value for geologic stability of new blufftop development. In theory, failure should occur when the factor of safety drops to 1.0. Therefore, the factor of safety at increasing values above 1.0 lend increasing confidence in the stability of the slope. To establish a safe setback for slope stability, the geotechnical analysis needs to establish the distance from the edge of a coastal bluff at which the factor of safety is equal to 1.5.

In addition to this landslide potential, the bluff is also subject to erosion over time. As the bluff retreats by gradual erosion, the factor of safety for the development will gradually decrease. Thus, establishing the required GSL includes determining the setback to achieve a factor of safety of 1.5 as well as estimating bluff retreat over 75 years. As

discussed in greater detail below, it is critical to look at both slope stability and the predicted rate of erosion when determining the GSL, because as the bluff naturally continues to retreat, the location of a safe setback for slope stability will move inland.

Factor of safety

The applicants' preliminary geotechnical evaluation by David Skelly and John Franklin (GeoSoils, Inc.; GSI) dated Aug. 24, 2010 determined that the factor of safety of 1.5 was 59.5 feet from the bluff edge. The subject lot is approximately 120 feet deep and the applicants argued that a 59.5-ft. setback would severely limit the buildable area of the property. Accordingly, GSI recommended that the portion of the home located between 40 ft. (City's minimum setback for new principal structures) and 59.5 feet from the bluff edge be supported by drilled pier foundations (caissons). During third-party review, the City's geotechnical consultant (Geopacifica) requested that GSI explain the difference in the factor of safety setback determined for the subject property (59.5 feet) and the adjacent property to the south (46 feet; A-6-ENC-16-0067/Meardon) by the same geotechnical company. In response, GSI re-analyzed slope stability for the subject site and reported in their geotechnical report dated October 19, 2015 that the factor of safety of 1.5 is 40 feet from the bluff edge.

Commission staff has done a thorough review of the slope stability analyses associated with this project. There are several slope stability analysis methods, and GSI used different slope stability analysis methods to determine the 59.5-ft. and 40-ft. setbacks. The most common slope stability analysis method, especially for coastal bluffs, is the Modified Bishop's Method. Another method is the Simplified Janbu Method. However, the latter method is *not* commonly used for coastal bluffs and is less conservative than the Modified Bishop's Method. GSI determined the 59.5-ft. setback using the Modified Bishop Method and determined the 40-ft. setback using the Simplified Janbu Method. GSI explained the rationale for changing the stability analysis methods as follows in its geotechnical report dated October 19, 2015:

> *We selected the Simplified Janbu method for evaluations of gross and intermediated bluff failures because we believe that the limit-equilibrium approach modeled in the Modified Bishop Method yields significantly conservative results and unrealistic failure surfaces for the typical coastal bluff mass wasting events observed in the site vicinity.*

The Commission's former staff geologist concluded that use of the Simplified Janbu Method should be discouraged (Johnsson 2005):

> *In general, methods that satisfy both force and moment equilibrium, such as Spencer's (Spencer 1967; 1973), Morgenstern-Price (Morgenstern and Price 1965), and General Limit Equilibrium (Fredlund et al. 1981; Chugh 1986) are preferred. Methods based on moment equilibrium alone, such as Simplified Bishop's Method (Bishop 1955) also are acceptable. In general, methods that solve only for force equilibrium, such as Janbu's method (Janbu 1973) are*

> *discouraged due to their sensitivity to the ratio of normal to shear forces between slices (Abramson et al. 1995).*

The City's geotechnical reviewer, Geopacifica, also had reservations with the use of the Simplified Janbu Method since it had not previously been used in any bluff stability analyses in the City of Encinitas. Nonetheless, GSI ultimately did not object to use of the Simplified Janbu Method as state-licensed engineers had stamped the subject report. In addition, the City's LCP does not specify the type of slope stability analysis method that should be used for coastal bluffs. Similarly, GSI argued in its June 15, 2016 Geotechnical Response to the California Coastal Commission Appeal that:

> *... the City's LCP requirements for geotechnical investigations do not stipulate the required methods when analyzing slope stability. Rather, it is left to the consultant's geotechnical expertise and judgement with the City Geotechnical Consultant's review and concurrence for modeling site-specific slope stability.*

As a result, Geopacifica and the City accepted use of the Simplified Janbu Method for this project and the 40-ft. setback determined by that analysis. However, shortly thereafter, the City adopted a policy that all slope stability analyses for coastal bluff stability must utilize the Modified Bishop's Method to assure uniformity in the results (Slope Stability Analysis Policy for Coastal Bluffs, City of Encinitas by Geopacifica, Inc. dated November 15, 2015).

The Commission acknowledges that there are different interpretations of the most appropriate approach to determining slope stability. However, the Commission has consistently discouraged the Simplified Janbu Method because the Commission's former staff geologist identified the Spencer's, Morgenstern-Price, and Simplified Bishop's Methods for coastal bluff stability analyses to be more accurate, and given the level of unpredictability around coastal processes, including and especially sea level rise, it is important to use more conservative methods (e.g., Spencer's Method used in CDP #6-17-0239/Mansukhani, Morgenstern-Price used in CDP #6-15-1717/Barr, Simplified Bishop's Method used in CDP #A-6-ENC-13-0210/Lindstrom). The current Commission geologist concurs that use of the Janbu Method is not appropriate. Given that the City of Encinitas is now requiring use of the Modified Bishop's Method for all coastal bluff stability analyses, it would be inconsistent to apply the insufficiently cautious Simplified Janbu Method to this one project at this time.

In response to the concerns raised by Commission staff related to the adequacy of the applicants slope stability analysis method, the applicant submitted a subsequent analysis that used the Spencer's method. This analysis also found that the 1.5 factor of safety is at 40 ft. on the subject site. As stated above, the former Commission geologist has indicated the Spencer's method is an acceptable method. The current Commission geologist concurs that the Spencer's method is appropriate for this site. Thus, the Commission finds the revised slope stability analysis based on the Spencer's method is appropriate, which results in a 1.5 factor of safety setback of 40 ft.

Erosion rate

The applicants' preliminary geotechnical evaluation, by GSI and dated Aug. 24, 2010, determined an erosion rate of 0.27 ft./yr. based on past reports and qualitative review of historical data (1996 USACE study reporting long-term erosion rate for Encinitas of 0.3-0.9 ft./yr., 2003 geotechnical investigations reporting long-term erosion rates for the adjacent property of 0-0.05 ft./yr. and 0-0.13 ft./yr., and California Coastal Records Project photographs from 1972-2013 showing very little retreat of the blufftop). In response to the Commission's concern that the review of the Coastal Records photographs could provide only a qualitative evaluation, GSI, with oversight and direction from Dr. Benjamin Benumof, retained Ciremele Surveying Inc. (CSI) to perform photogrammetric and physical surveys of historical bluff retreat to determine the site-specific erosion rate. Based on CSI's analysis of data between 1932 and 2014, GSI stated in its geotechnical report dated January 19, 2017 that the site-specific erosion rate ranged from 0.07-0.20 ft./yr., with a mean rate of 0.13 ft./yr. GSI then concluded that its original erosion rate of 0.27 ft./yr. allows for "uncertainties and the effects, if any, of sea level rise over the structure's design life of 75 years" and is therefore "valid, conservative, supported by historical data, appropriate for the subject site, and is in conformance with the [Commission's] sea level rise policy guidance (CCC 2015)." At a rate of 0.27 ft. /yr., approximately 20 feet of bluff retreat would be expected over a 75-year period.

However, both the Commission's staff geologist and engineer reviewed GSI's geotechnical reports and have determined that the 0.27 ft. /yr. erosion rate does not adequately reflect "foreseeable cliff erosion," as required in Section 30.34.020(D) of the IP. In addition, the applicant did not provide sufficient rationale to describe why the historic erosion rate was only increased by 0.07 ft. /yr. to account for future sea level rise.

In many past new bluff top home approvals in Encinitas, the Commission has applied a retreat rate of 0.49 ft./yr. for purposes of determining the development setback necessary to minimize hazards from long-term bluff erosion (e.g., CDP #s A-6-ENC-09-002/Wellman, A-6-ENC-09-003/Wellman, A-6-ENC-09-040/Okun, A-6-ENC-09-041/Okun, and A-6-ENC-13-0210/Lindstrom). At a rate of 0.49 ft. /yr., approximately 37 feet of bluff retreat would be expected over a 75-year period. This rate is the local maximum historic erosion rate observed in the Encinitas reach of the Benumof and Griggs (1999) study, and was recommended by the Commission's former staff geologist, Dr. Mark Johnsson, as a conservative estimate to account for (a) uncertainty related to the true value of the long-term bluff retreat rate at a given site; and (b) the likelihood that future bluff retreat rates will increase in response to rising sea level, and increase the exposure of the bluffs to wave attack – an eventuality that the use of even an accurate, site-specific historical retreat would not capture. In the aforementioned appeals, the use of a local maximum bluff retreat rate was considered conservative, and preferable to the lower bluff retreat rates provided by the applicants, which were typically pulled from the literature or not based on site-specific analysis. In cases where the applicant's consultant undertook a site-specific study, using photogrammetric analysis of aerial imagery spanning multiple decades (or another verifiable, reproducible methodology), the Commission has typically accepted the applicant's bluff retreat rate, even where lower

than the local maximum value from Benumof and Griggs (1999) (e.g., CDP#s A-6-ENC-06-100, A-6-ENC-06-101, A-6-ENC-04-081).

However, as the lead author of the aforementioned FEMA-funded study, Dr. Benumof in his reviews dated January 26, 2017 and September 27, 2017 disagrees with use of the 0.49 ft. /yr. erosion rate:

> *... CCC Staff's recommended use of 0.49 ft./yr., which pertains to an isolated 'hot-spot' with materially different lithologic and structural characteristics several hundred meters to the south of the Martin Project site, is not scientifically supportable and is therefore misguided and misapplied.*
>
> *[...]*
>
> *... the calculated rate of retreat [i.e. approximately 0.07 to 0.20 ft. /yr.] is consistent with the decreasing erosion rate trend, shown in Figure 3a of Benumof and Griggs (1999), near the northerly end of the Benumof & Griggs Encinitas study area.*

Commission staff disagrees with Dr. Benumof's conclusions for several reasons. First, the Commission's staff geologist considers an important fact that the stretch of coastline examined in the FEMA-funded study contained an erosion "hotspot," since the Commission's goal is to use the upper-bound historic erosion rates as a proxy for higher, future erosion rates associated with sea level rise. In other words, this particular instance of erosion should not be discarded as an anomaly or outlier, but rather should be used as a functional indicator of the accelerated rate of erosion that could be expected to occur in the coming decades. The Commission approved using an erosion rate of 0.49 ft./yr. over 75 years in the last five referenced blufftop home appeals in Encinitas in order to provide conservative estimates of bluff loss, especially given the unpredictability of sea level rise and recent updates that found previous long-term estimates of sea level rise to be too low.

Second, in contrast to Dr. Benumof's suggestion for a decreasing rate of erosion north of the study area, there is little basis upon which to extract a trend from the erratic increases and decreases about the mean (approximately 8 cm/yr. or 0.26 ft./yr.) shown in Figure 3a of Benumof and Griggs (1999). The proposed project is located between the Benumof and Griggs (1999) Encinitas study area (where erosion rate closest to the project site is approximately 8 cm/yr. (0.26 ft. /yr.)) and the Carlsbad study area (where the erosion rate closest to the project site is approximately 30 cm/yr. (0.98 ft. /yr.)) suggesting, if anything, that erosion rates north of the Encinitas Study area might actually increase rather than decrease. Some of the variability in erosion rates that was observed in Benumof and Griggs (1999) relates to different wave exposure, cliff geomorphology, and structural discontinuities. Some differences are inherent in the measurement method that involves delineating bluff position at two points in time years apart. Yet, over the long-term, the fairly linear nature of the Encinitas shoreline suggests that the erosion rates are generally the same. If that were not the case, there would be large differences in the location of the bluff, where reaches with higher erosion rates would be located further inland, resulting in a shoreline comprised of headlands and coves. In contrast, the Encinitas bluffs have retreated as a fairly homogenous unit, drawing into question the

suggestion of a long-term decreasing erosion rate north of the Encinitas study area.

Furthermore, the lithological and structural differences described by Dr. Benumof and GSI between the bluff fronting the subject site and the bluff 0.43 miles south characterized as experiencing localized high erosion were not identified in the U.S. Army Corps of Engineers (USACE) 2015 Final Environmental Impact Report for the Encinitas-Solana Beach Coastal Storm Damage Reduction Project. USACE (2015) analyzed sea cliff and blufftop retreat in Encinitas and described the reaches containing the subject site and the asserted erosion "hotspot" as similar. In fact, USACE (2015) noted that the reach containing the "hotspot" was *more* stable than that containing the subject site. USACE (2015) also reported significantly higher erosion rates for the reaches containing the subject site and the erosion "hotspot," 1.2 ft. /yr. and 1 ft. /yr., respectively. Thus, the applicants' long-term erosion rate of 0.27 ft. /yr. is considerably lower than the rate used in the Commission's recent approvals of blufftop homes in Encinitas, which used an erosion rate of 0.49 ft. /yr., and the rate of 1.2 ft. /yr. determined by USACE (2015) for the stretch including the subject site.

Lastly, Commission staff disagrees with Dr. Benumof's assertion that use of the 0.49 ft. /yr. erosion rate is "not scientifically supportable." In further support of this rate, the resulting retreat of approximately 37 feet is consistent with the upper-bound retreat predicted by Coastal Storm Modeling System 3.0 (CoSMoS), a new, state-of-the art tool developed by the United States Geological Survey (USGS) to predict year 2100 cliff positions based on various sea level rise scenarios. CoSMoS integrates eight complex cliff retreat models which take into account not only changes in mean sea level (and the rate of SLR), the historical bluff retreat rate (which is assumed to capture site-specific factors, such as geology), a range of likely wave climates based on historical variability and global climate models, and the progressive evolution of the shore and cliff profiles over time. In comparison, Equation (1) assumes a direct response of the bluff retreat rate to a change in sea level rise rate, and that all other factors can be discounted. Additionally, and importantly, CoSMoS provides information about the range of uncertainty around the central estimates of future cliff retreat. For the CoSMos transect (No. 733) nearest the project site (transect 733 crosses the neighboring 452 Neptune Ave. parcel), the CoSMoS model estimates a mean year 2100 bluff retreat of 27.2 ft. with an uncertainty range between 6 ft. and 48.5 ft. for an estimated sea level rise of 2 meters (6.56 ft.). The point of evaluating the CoSMoS information is to provide an additional means of confirming the validity, consistency, and accuracy of a 0.49 ft. /yr. erosion rate.

The erosion rate of 0.49 ft. /yr. used by the Commission for the past five Encinitas blufftop projects is scientifically valid and also a reasonable conservative erosion rate considering expected increases in erosion resulting from sea level rise. However, for the subject project, the site-specific historic bluff retreat rate provided by the applicant was estimated using valid methods, falls within the range of previous estimates for this stretch of the Encinitas coast, and is comparable to an independent estimate of the retreat rate for the project site (Hapke & Reid 2007). The Commission geologist and engineer concur that the maximum bluff top retreat rate of 0.20 ft. /yr. provided by the applicants represents a valid estimate of the historical bluff retreat rate at the site, and can be used to inform the analysis and determination of a safe development setback on the subject site.

However, as discussed in greater detail below, this historical estimate does not, and cannot, account for potential future acceleration of the bluff retreat rates related to sea level rise.

On September 21, 2017, the applicants' geotechnical consultant submitted a geotechnical memorandum to further argue that 0.27 ft. /yr. was an appropriate erosion rate for the site (GSI, 2017). The geotechnical memorandum also included an alternative method to determine future bluff erosion that incorporated site specific information and sea level rise estimates. The alternative method (SCAPE Method) was initially developed by Walkden and Hall[1] to measure the relationship between changes in retreat rate and different sea level rise scenarios. SCAPE (Soft Cliff and Platform Erosion) is a detailed, process-based numerical model that was developed to simulate the sensitivity of shore profile response, including cliff retreat rates, to changes in sea level over timescales of decades to centuries. (Walkden and Hall (2005); Walkden and Hall (2008).)

As stated in the applicants' geotechnical memorandum:

> *"…This[SCAPE] analysis uses site-specific calculated historical bluff retreat, justified and probable SLR over the next 75 years, and scientifically reviewed methodology to calculate the potential annualized retreat rate over the life of the project…"*

Although not proposing to use the SCAPE method, the applicant calculated that with the SCAPE Method, the expected long term erosion rate would be 0.344 ft. /yr., which is equal to 26 ft. of bluff retreat over the expected 75 year lifespan of the proposed blufftop home. To determine the erosion rate of 0.344 ft. /yr. the applicants assumed that sea levels would rise by 4.1 ft. by the year 2100.

The Commission geologist and engineer have determined that the SCAPE Method is the most appropriate way to incorporate expected sea level rise into the estimated long-term erosion rate for the subject site. However, the Commission geologist and engineer do not support the sea level rise estimate chosen by the applicants' geotechnical consultants in the formula. The Commission's 2015 SLR Policy Guidance recommended the use of region-specific SLR projections contained in the NRC 2012 science report as the best available science. In the time since the CCC Guidance was released, the California Ocean Protection Council (OPC) has released two reports that, taken together, update the Commission's understanding of sea level rise science and best practices for planning for and adapting to sea level rise impacts. The first of these reports, *Rising Seas in California: An Update on Sea-Level Rise Science* (Griggs et al. 2017), synthesizes recent evolving research on sea level rise science, and provides new, California-specific projections of future sea level rise, under several GHG emissions scenarios, within a probabilistic framework.[2] For high (RPC 8.5), medium (RPC 4.5) and low (RPC 2.6)

[1] M. J. Walkden, Associate Director, WSP Global, United Kingdom and Prof. J. W. Hall, Environmental Change Institute SoGE, University of Oxford.

[2] Following the method of Kopp et al. (2014), the "probabilistic projections" provided in the *Rising Seas* report (Griggs et al. 2017) do not provide actual probabilities of occurrence of sea-level rise, but rather provide probabilities that the ensemble of climate models used to estimate contributions of sea-level rise (from processes such as thermal expansion, glacier and ice sheet mass balance, and oceanographic

emissions pathways, the *Rising Seas* report provides sea level rise projections corresponding to the "median" (50% probability of exceedance, a "likely range" (33% - 66% probability of exceedance), 1-in-20 chance (5% probability of exceedance), and 1-in-200 chance (0.5% probability of exceedance) for a range of future years. The projections also include an extreme SLR scenario ("H++") based on recent studies of the potential for rapid, high magnitude ice sheet loss, for which no probability is estimated.

The second report, the *State of California Sea-Level Rise Guidance 2018 Update* (OPC 2018), builds on the science report and provides recommendations for how to plan for and address sea level rise impacts, including the recommendation that the new, region-specific sea level rise projects be used throughout the State. A novel feature of the new State Guidance is that it recommends specific sea level rise projections for use in different types of planning and policy decisions, depending on the appropriate level of "risk aversion" that applies to a decision. In this decision framework, the Guidance draws on the probabilistic projections included in the *Rising Seas* report. For example, the Guidance recommends that the high end of the likely range (66% probability) of projections be used for "low risk aversion" decisions, such as the planning or permitting of public access or recreational infrastructure, for which the consequences of error are low and adaptive capacity is high. The 1-in-200 chance (0.5% probability) projections are recommended for "medium-high risk aversion" decisions, such as the siting of residential development, for which the consequences of being wrong are higher, potentially risking life and property, and the range of adaptation options is more limited. Finally, the Guidance recommends that the H++ projections be used for "extreme risk aversion" decisions, such as projects with no adaptive capacity and major consequences for a community if destroyed or damaged (i.e., critical infrastructure).

In the framework of the *Rising Seas* report (Griggs et al. 2017) and 2018 State SLR Guidance (OPC 2018), the 125 cm (4.1 ft.) of sea level rise by 2100 assumed by GSI (2017b) has an approximately 10% chance of exceedance under a "high emissions" scenario (OPC 2018, Table 32). This falls somewhat above the OPC (2018) "likely range" (up to 3.6 feet by 2100), but below the "5% probability" range (up to 4.6 ft. by 2100). The Commission geologist and engineer recommend, pursuant to the OPC Guidance that medium-high risk aversion scenario be used to site the home on the subject site, which predicts up to 7.1 ft. of sea level rise by the year 2100. An expected sea level rise of 7.1 ft. would result in an annual erosion rate of 0.52 ft. /yr. and 39 ft. over the 75-year expected life of the home. The estimated erosion rate recommended by the Commission geologist and engineer is generally consistent with the Benumof et al. rate most recently used by the Commission and falls within the uncertainty range projected from the CoSMoS cliff retreat modeling.

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conditions, among others) will predict a certain amount of sea-level rise. These probability distributions will be updated in future updates to the State guidance documents as climate science continues to evolve and models are updated.

GSL Determination

The GSL must be determined for each project to provide an adequate setback to avoid the need for future bluff retention devices. The combination of slope stability analyses and the estimated erosion rate determines the geologic setback. On the subject property, by combining the approximately 40-ft. setback needed to achieve a factor of safety of 1.5 and the 39-ft. setback needed to accommodate 75 years of bluff retreat, the geologic setback would be 79 feet.

The applicants do not agree that the certified Encinitas LCP requires new blufftop homes to obtain a factor of safety of 1.5 after 75 years of expected erosion. In the applicants' geotechnical report dated January 19, 2017, GSI stated:

> *... adding the 0.49 ft. /yr.[3] 75-year erosion rate, suggested by CCC staff, on top of the static FOS setback distance is nearly a 200 percent redundancy in the 1.5 static FOS setback. Cumulative setbacks are not contained within the City LCP.*

Similarly, City staff have indicated that they interpret Section 30.34.020(D) to mean that the geologic setback should be the setback needed to achieve a factor of safety of 1.5 today OR the expected amount of bluff retreat over the 75-year assumed life of the structure, whichever is greater, but not less than the City's minimum 40-ft. coastal bluff setback. However, the language of Section 30.34.020(D) of the LCP is very specific:

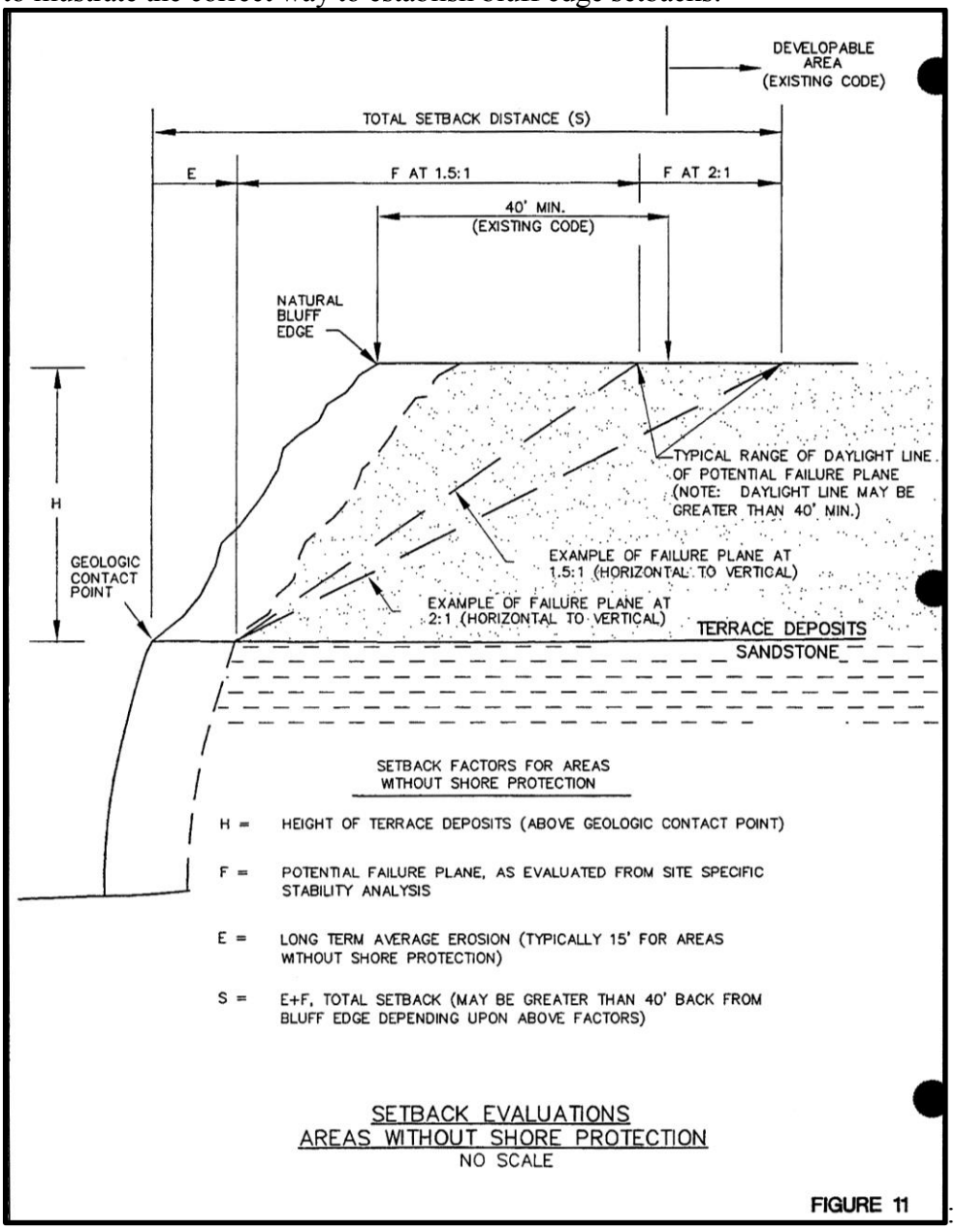
> *... This slope failure analysis shall be performed according to geotechnical engineering standards, and shall:*
>
> *a. Cover all types of slope failure.*
> *b. Demonstrate a safety factor against slope failure of 1.5.*
> *c. Address a time period of analysis of 75 years.*

The applicant and City staff have suggested that this policy requires that the analysis cover all types of slope failure but then only take into account one of the two other factors; that is, that the project must demonstrate a factor of safety of 1.5, OR erosion over 75 years, rather than addressing all three considerations. Based on this interpretation, the City approved the home to be located approximately 40 feet from the bluff edge (setback needed to achieve a factor of safety of 1.5 according to the applicants' geotechnical report).

However, for at least the past 17 years, the Commission has interpreted the City's LCP as requiring that development look at all three of these factors (e.g., A-6-ENC-01-047/Conway and Associates, A-6-ENC-02-003/Berg, A-6-ENC-06-100/Zagara, A-6-ENC-06-101/Albani, A-6-ENC-09-002 & 003/Wellman, A-6-ENC-09-040 & 041/Okun, A-6-ENC-13-0210/Lindstrom). The applicant and the City may not arbitrarily select some factors while ignoring the others. This policy does not present a menu of options for an

[3] Commission staff had previously provided the applicant with a draft recommendation on the project that used a 0.49 ft. /yr. erosion rate. Subsequent to additional review of site specific data, the Commission is now recommends the use of an erosion rate of 0.344 ft. /yr.

applicant to choose from, but rather a list of the types of analysis necessary to identify where hazardous development conditions are located on the site. As an example, the City would not accept a geotechnical report that didn't analyze all types of slope failure on a site; if this policy was treated as a menu of options, an applicant could decide to conduct only one of the three types of analysis. In practice, the City requires all types of slope failure be assessed, AND the greater setback between a 1.5 factor of safety OR 75 years of erosion; however the policy does not contain language to allow for this discretion. Furthermore, in 1996, a technical report, commissioned by the City to provide recommendations related to coastal bluff and shoreline issues, recommended that the City require setbacks for new development be established by calculating the 75 year erosion rate AND the 1.5 FOS setback (Moffatt & Nichol 1996) (Exhibit 8). The technical report included the figure shown below to illustrate the correct way to establish bluff edge setbacks:



Interpretation of Section 30.34.020(D)

To further resolve the differing interpretations of slope failure analysis requirements in ordinance 30.34.020(D), the Commission turns to well-settled standards of statutory interpretation. Courts commonly use three steps in a particular order to ascertain the meaning of legislative language: reading the plain language in context, examining external sources such as the legislative history and canons of construction for further evidence of intent, and finally considering the consequences of a proposed interpretation, including the public policy implications. (See *Klein v. United States of America* (2010) 50 Cal.4th 68, 77, 83; *Alejo v. Torlakson* (2013) 212 Cal. App. 4th 768, 786-788; *MacIsaac v. Waste Mgmt. Collection & Recycling, Inc.* (2005) 134 Cal.App.4th 1076, 1082-1084.)

Generally the second and third steps are used as the previous one fails to resolve the question. For purposes of this analysis, all these approaches are examined. In this case, all three favor the Commission's interpretation that the entire list – covering all types of slope failure, demonstrating a safety factor of 1.5, and analyzing safety for 75 years—is required for the applicant to demonstrate sufficient safety for the project to be built on the blufftop.

1. Plain language

While the words used in the LCP are the most useful guide to its intent, the Commission should not view the language in isolation but bear in mind the provision's purpose. (See *MacIsaac*, *supra,* 134 Cal.App.4th at p. 1083.)

Where a list of items lacks a connector, the reasonable reading of the ordinance is a consistent "and" to join all items on the list. This rationale has been applied in the context of criminal law, where the Supreme Court's interpretation of "and" into a list was literally a matter of life and death—the defendant had been sentenced to the death penalty. The court explained that jury instructions that lacked a connector between elements were not ambiguous, and thus the defendant's assertion that the jury was confused, failed:

> Absent the insertion of express disjunctives, the listing of three separate elements that must be proved clearly implied that proof of *each* was independently necessary. We therefore reject defendant's contention.

(*People v. Friend* (2009) 47 Cal.4th 1, 79 (emphasis in original).) A later case, equally serious, reached the same result to include all elements:

> We acknowledge the… written instruction was not a model of clarity, but even were we to assume it was ambiguous, there is no reasonable likelihood the jury applied it in an impermissible manner.

(*People v. Harris* (2013) 57 Cal. 4th 804, 854.)

Finally, a congressional guide to statutory interpretation[4] cites two federal cases where an *expressed* "or" was interpreted to be an "and," in order to effectuate the purpose of the law and to avoid meaningless clauses. (*United States v. 141st St. Corp.,* (2d Cir. 1990) 911 F.2d 870, 878; *De Sylva v. Ballentine* (1956) 351 U.S. 570, 573. In *De Sylva*, the U.S. Supreme Court noted the word "or" "is often used as a careless substitute for the word 'and'… and both are "context dependent." (*Ibid*; [internal quotation marks omitted].)

The City and the applicant would have the Commission interpret Section 30.34.020(D) as follows:

> *... This slope failure analysis shall be performed according to geotechnical engineering standards, and shall:*
>
> *a. Cover all types of slope failure.* [and]
> *b. Demonstrate a safety factor against slope failure of 1.5.* [or]
> *c. Address a time period of analysis of 75 years.*

All three are "geotechnical engineering standards" qualifying the slope failure analysis; thus, there is no reason to disregard an element because it somehow does not fit on the list. Regarding the connection between (a) and (b), the City and applicant seem to agree with staff that the lack of a connector means "and." However, it is unusual, at the least, to read an "and" between "a" and "b" then turn around and read an "or" between (b) and (c); that is, to cherry pick two factors out of three and allow the applicant choose one of the latter at whim, especially without any supporting language to justify that interpretation.

As the Surfrider Foundation has pointed out in previous comments,[5] leaving out 75 years means the house could be sited safely with factor of 1.5 at the outset, but lose that safety with the first episode of bluff loss or more gradually with steady erosion. It would not be safe for the life of the development; it might not even be safe for a year. By contrast, leaving out the factor of 1.5 implies it would not be safe for even the first day of use. Further, analysis of 75 years without the industry standard factor of safety would be meaningless. Ordinary statutory construction bars superfluous language and forbids this result. (See, e.g., *City of San Jose v. Super. Ct.* (1993) 5 Cal.4th 47, 55.)

As for context, the overarching, and overwhelming, approach of the LCP is to ensure safety for the lifetime of the project. As cited above, Public Safety Policy 1.6 of the City's LUP requires the geotechnical report:

> … shall indicate that the coastal setback will not result in risk of foundation damage resulting from bluff erosion or retreat to the principal structure *within its economic life*…

[4]Congressional Research Service, Statutory Principles and Recent Trends, 2014, pp. 9-10.
[5] Comments submitted by Surfrider for the "substantial issue" hearing, July 13, 2016 (A-6-ENC-16-0060, Exhibit 10).

(Emphasis added.) The geotechnical report shall "express a professional opinion as to whether the project can be designed or located so that it will neither be subject to nor contribute to significant geologic instability throughout the *life span* of the project." (IP § 30.34.020, Subd. (D), emphasis added.) The report shall certify that the proposed development will have "no" adverse effect on the stability of the bluff, will not endanger life or property, and that a proposed structure is expected to be "reasonably safe from failure and erosion *over its lifetime*" without a protective device. (*Ibid*., emphasis added.) In cases of conflict, the more restrictive policy shall regulate. (Subd. (B).)

The LCP's purpose is clear that ensuring the safety of a home on dangerous bluffs requires a conservative approach – one that minimizes risk in alignment with the Coastal Act Section 30253.

2. Extrinsic aids: LCP history and canons of interpretation

If the plain language nevertheless raises questions, the certification history of the LCP supports requiring all three standards in the geotechnical report. The City submitted 30.34.020(D) as part of an IP proposal in 1995, and the Commission certified the subdivision without further modifications. In its report (Ref: LUP/IP Approval), staff recommended related modifications, including to Policy 1.6 and other parts of 30.34.20, that the Commission certified and the City accepted.[6] The resulting LCP appropriately reflects the mandate to minimize risk, consistent with the Coastal Act.

Nothing in the certification staff report suggests a far-fetched interpretation with a mix of "and" and "or" for section 30.34.020(D). Common sense informs the Commission now that the Commission then would not have certified a confusing set of standards that fly against the thrust of the LCP and likely would not have been found consistent with Coastal Act section 30253. The very lack of comment supports an ordinary interpretation: all three standards are required. This aligns with a popular canon of construction that bars creating absurdities where none need exist. As Justice Scalia noted, when the language creates an absurd result, it should be rejected. (*Green v. Bock Laundry Machine Co.* (1989) 490 U.S. 504, 527-528 (Scalia, J., concurring.) It follows that an interpretation that creates an absurd result should be rejected.

3. Public policy implications

Finally, "where uncertainty exists," consideration should be given to the "consequences" that flow from a particular interpretation. (*Klein*, *supra*, 50 Cal.4th 68, 77.) This consideration may include matters outside the words, such as the "context, the object in view, the evils to be remedied, the history of the times and of legislation upon the same subject, public policy and contemporaneous construction." (*Alejo, supra*, 212 Cal. App. 4th at pp. 787-788.) It is not an "abstract exercise in semantics" but an exploration to

[6] Moreover, a consultant to the City at the time recommended that erosion rates should be added to the factor of safety, not somehow be combined in the same setback. (Encinitas Bluff and Shoreline Technical Report (1996), pp. 52, 54, 56 and Figure 11 on pp. 53.)

effectuate the purpose of the law. (*Ibid.*) The evil of a house falling off the bluff is to not only be remedied, but prevented. Cherry picking among the factors is not a safe interpretation.

Finally, as a matter of public policy, the Commission's interpretation is entitled to respect:

> The Commission has the ultimate authority to ensure that coastal development conforms to the policies embodied in the state's Coastal Act. In fact, a fundamental purpose of the Coastal Act is to ensure that state policies prevail over the concerns of local government.

(*Charles A. Pratt Construction Co., Inc. v. Calif. Coastal Com.* (2008) 162 Cal.App.4th 1068, 1075.)

The Commission's position has been that the City's interpretation does not ensure that a 1.5 factor of safety (the industry-standard for new development for geologic stability against landsliding) will be maintained over the economic life of the development. Indeed, if the development is set back at the distance necessary to achieve a 1.5 factor of safety today, *any* bluff retreat will immediately reduce its stability below the factor of safety of 1.5. Thus, the City's interpretation of this policy would result in a significant underestimate of the setback necessary to ensure new development will be safe from failure and erosion over its lifetime, and almost guarantees that at least some structures will need either shoreline protection or have to be relocated or removed to maintain safety over the next 75 years.

The Commission's former staff geologist provided a policy memorandum for a workshop to the Commission in 2003 that detailed the methodology to determine the GSL. That memorandum was later published in 2005 (Exhibit 5). The Commission generally considers 75 years as the economic life of new single-family homes and that time period is also set by the LCP. Thus, a factor of safety of 1.5 must be maintained throughout the 75 year life of the home to be consistent with Coastal Act Section 30253 and IP Section 30.34.020(D). The best way to assure safe development is to find the distance from the bluff edge necessary to achieve a factor of safety of 1.5 today and add to that the expected bluff retreat over the next 75 years.

In addition, taking into account either the factor of safety or the erosion rate, but not both, would set a significant adverse precedent for siting blufftop development in Encinitas. The Commission recently found Substantial Issue for two projects involving demolition of existing blufftop homes and construction of new blufftop homes in Encinitas (6-ENC-16-0619/Hurst and 6-ENC-16-0624/Meardon) that similarly did not fully assess geologic stability factors over 75 years. If the potential for bluff failure and erosion is not accurately and fully evaluated, multiple proposals for new residences that will likely need shoreline protection in the future can be expected.

Past Commission Approvals

The City's LCP was certified by the Commission in 1995, and since that time, the City has approved the construction of approximately 30 new bluff top homes. Following approval of the City's LCP, setbacks for Encinitas blufftop homes have ranged from 40 to 62 ft. from the bluff edge.

Between 1995 and 2000, the City approved seven new bluff top homes. None of these City approvals were appealed to the Commission. In the years directly following approval of the LCP, the Commission did not have a geologist and therefore, it was not always feasible for Commission staff to determine the appropriate GSL and staff accepted, where credible, general statements by applicants' representatives regarding the appropriate bluff edge setback. During this time period, the vast majority of geotechnical reports did not include the expected long term erosion rate or the location of the 1.5 Factor of Safety setback on a site. Thus, it is likely that the geotechnical claims made by these applicants were inconsistent with the requirements of the City's LCP and were not based on the cumulative setback needed to account for 75 years of expected erosion and the 1.5 Factor of Safety.

In approximately 2001, the Commission hired its first licensed geologist, Dr. Mark Johnsson. With the addition of Dr. Johnsson's technical expertise, Commission staff was able to interpret geotechnical results for new blufftop development and also began to require that more extensive geotechnical review be provided by applicants, including the expected long term erosion rate and the location of the 1.5 Factor of Safety setback on a site, in order to justify applicants assertions that development would be safe for 75 years, as required by the City's LCP.

Since 2001, the City has approved 23 new bluff top homes and 16 of these approvals have been appealed to the Commission. The fact that the Commission did not review the remaining 14 new bluff home approvals since certification of the LCP on appeal does not mean that the Commission definitively agreed with the City action or the approved setback. In deciding whether to appeal a project, the Commission examines the particular circumstances; this discretion extends to the finding of that the local approval raises a significant issue.

The results of the 16 appeals of new bluff top homes are as follows:

- The Commission approved 8 appeals on De Novo
- The Commission found No Substantial Issue on 2 appeals
- The Commission found Substantial Issue on 3 appeals (including the subject appeal), but has not yet acted on the De Novo reviews
- 3 appeals were withdrawn prior to Commission action

The interpretation of how to correctly determine the appropriate bluff edge setback was an appeal contention in each of the 10 appeals that the Commission took a final action on (either approval on De Novo or No Substantial Issue and not withdrawn or still pending). In 9 of the 10 appeals, the Commission found that the correct way to determine the GSL

is to find the distance from the bluff edge necessary to achieve a factor of safety of 1.5 today and add to that the expected bluff retreat over the next 75 years.

Four of the homes reviewed on appeal by the Commission were approved with an adequate setback to meet the LCP requirements of adding the 75 years of expected erosion to the 1.5 Factor of Safety setback (A-6-ENC-01-047/Conway and Associates, A-6-ENC-02-003/Berg, A-6-ENC-06-100/Zagara, A-6-ENC-13-0210/Lindstrom).

Five of the homes reviewed on appeal by the Commission had constrained lots and a reasonably sized home could not be built on the sites consistent with the appropriate geologic setback. In these situations, the Commission either approved the use of caisson foundations (Ref: CDPs 6-ENC-09-002 & 003/Wellman and A-6-ENC-06-101/Albani) or allowed homes to be built with the expectation that they may not be safe for 75 years and would need to be removed if threatened in the future (A-6-ENC-09-040 & 041/Okun).

The Commission found no substantial issue for one of the homes reviewed on appeal (A-6-ENC-04-081/Hendrick). On this appeal, staff recommended a larger setback than approved by the City in order to meet the LCP requirements of adding the 75 years of expected erosion to the 1.5 Factor of Safety setback. However, the Commission determined that the setback approved by the City was adequate and did not undertake a De Novo hearing.

Many geotechnical reports that have recommended setbacks not based on all these criteria in Encinitas have proven to be flawed, such that shoreline protection was required after construction of the blufftop homes. The table below details the blufftop homes in Encinitas approved after implementation of the Coastal Act that later applied for and were granted shoreline armoring to protect the new structures:

Name	Address	Street	Home Approval Year	New Home CDP #	Armoring Approval Year	Armoring CDP #
Bardacos	378	Neptune	1976	F3891	1994	6-93-085
Bardacos	402	Neptune	1977	f5473	1994	6-93-085
Pate	638	Neptune	1977	F6360	1993	6-93-36-G
Canter	172	Neptune	1981	F9833	1998	6-98-039
Denver	164	Neptune	1984	6-84-461	1998	6-98-039
Richards	524	Neptune	1986	6-86-570	1993	6-93-131

The reason that many of the geotechnical reports submitted by the applicants for new development in Encinitas did not accurately assess the risk to new development consistent with the requirement of the LCP is that the 1.5 factor of safety against landsliding was not being calculated in addition to bluff retreat predicted over the 75-year life of the structure.

Accordingly, for the subject site, the 75-year bluff retreat must be identified as 39 feet over the life of the structure, and when added to the recommended 40-ft. factor of safety setback, the GSL is located approximately 79 feet from the bluff edge in order for the structure to have a factor of safety of 1.5 for 75 years and to be sited so that it is reasonably safe from failure and erosion over its lifetime, without having to propose any shore or bluff stabilization to protect the structure in the future.

Recommended setback

Thus, in order to provide safety and stability for the life of a new structure on the subject site, a 79-foot setback is required. The applicant has suggested that requiring a 79 foot setback would not allow for sufficient room to build a reasonably sized residence.

However, since the subject lot from the edge of the bluff to the street is approximately 120 feet in length and 45 feet in width, a 79-ft. setback would still leave enough space on the site for an approximately 480 sq. ft. building footprint. A building footprint of 480 sq. ft. would allow the applicants to construct an approximately 960 sq. ft., 2-story home, including the garage, taking into consideration the City's required setbacks. The applicant could also construct a 15.8 ft. by 30 ft. second floor cantilever on the western side of the home, which would result in 474 sq. ft. of additional floor area. Thus, with a 79 ft. bluff edge setback the applicant could construct an approximately 1,434 sq. ft. home. A minor reduction in floor area would likely need to occur to design a home with reasonable articulation and design.

The Commission also encourages local governments to reduce front yard setbacks to allow greater building area on constrained blufftop lots. The size of the home could be significantly increased with a variance from the City that allowed the required 25 ft. front yard setback to be reduced. A 10 ft. front yard setback would allow for a 2,334 sq. ft. home and a 0 ft. front yard setback would allow for a 2,934 sq. ft. home.

The Commission has previously required homes to be built on a modest scale to minimize impacts to coastal resources while allowing economic use of the land (e.g., CDP #s 1-12-023/Winget and A-3-SLO-15-0001/Loperena). While the applicant has argued that in the interest of fairness, the applicant must be allowed to build a home the same size as surrounding structures, the Commission must evaluate projects based on current conditions using the best available science for predicting hazards and avoiding impacts to coastal resources. It is clear that many existing structures in Encinitas were not constructed with adequate setbacks, resulting in the significant amounts of shoreline protection present today. With sea level rise, the risk to bluff top lots is even greater now. Thus, the new development pattern for blufftop properties in Encinitas requires that new and rebuilt homes be located farther from the bluff edge. New homes that are smaller than existing, surrounding homes will be necessary to meet the geologic setback requirements. Indeed, the Commission's adopted Sea Level Rise Guidance states:

> *Highly constrained sites may not be able to support the amount of development that an applicant initially plans for the site … In such cases, it will be important to work closely with the appropriate planning staff to develop a project option that can minimize hazards from the identified sea*

level rise scenarios for as long as possible, and then incrementally retreat once certain triggers are met.

The City's LCP contains language requiring that a comprehensive shoreline management plan be developed. It will be important for the City to amend the LCP in the future to update changed conditions related to impacts associated with sea level rise, and this would also provide the City an opportunity to reassess long term planning strategies for blufftop development and redevelopment.

In this case, based on analysis of square footage listed on the website www.zillow.com on March 21, 2017 for 16 homes on the same block and side of Neptune Avenue, the average home has a floor area of approximately 2,557 sq. ft. (Exhibit 4). In the example where this site receives a variance for a 10 ft. front yard setback from the City, the resulting potential for a 2,334 sq. ft. house, which would be comparable to the average square footage of existing homes located along this coastal bluff. Given the hazardous location, the Commission strongly encourages the granting of reduced front yard setbacks which would allow homes to be sited more safely.

It may be that redeveloping some bluff top properties in Encinitas will require building homes smaller than existing surrounding homes in order to meet the geologic setback requirements. It is important that new development acknowledge changing circumstances that may require revisions to historic patterns of development, whether that means designing for increased storms and flooding, or accommodating sea level rise. On the subject site, there is a building envelope that allows the applicant enough room and flexibility, taking into consideration the City's required side yard setbacks, to design a home with reasonable articulation and design at similar bulk and scale to surrounding development.

Since the applicants submitted plans based only on a 40-ft. setback, Special Condition #1 requires the submission of revised final plans that conform to a 79-ft. setback for the home. Special Condition #1 also allows the applicant to seek a reduction in the City's required front yard setback, without the need to return to the Commission for an amendment to this permit, to achieve an even larger building envelope in which to construct the residential development.

Basement

LCP Public Safety Policy 1.6 requires that all new construction shall be specifically designed and constructed such that it could be removed in the event of endangerment. The proposed home includes construction of a basement. As stated previously, the bluffs along the Encinitas shoreline are known to be hazardous and unpredictable. Construction of a basement in a hazardous location is inconsistent with the policies of the LCP for several reasons. Although the proposed large basement area would initially be buried under the home, even siting the proposed residence 79 feet back from the bluff edge, the basement walls may become exposed in the future due to the structure being at risk from failure and erosion if erosion is greater than anticipated. Removing the 10-ft. deep basement or relocating it to a safe location would require a great deal of alteration of the

bluff and could even be infeasible, and the excavation could threaten the overall stability of the bluff. The applicants contend that a basement could be removed in the future if the structure were at risk and have provided a removal plan that they assert demonstrates how this could occur without potentially destabilizing the bluff. However, the submitted removal plan does not provide any detail related to geologic stability risks of removing a basement on an eroding blufftop site, does not detail how removal of the basement would impact stability of neighboring structures, and does not detail how the basement void could be filled if it is even possible to remove it. Thus, construction of a basement on this site is not consistent with the LCP and the Coastal Act, and therefore, Special Condition #1 prohibits a construction of a basement.

As detailed in Policy 30.34.20.B.1 of the City's IP, only at grade accessory structures and improvements are allowed within 40 ft. of the bluff edge. Grading seaward of the 40 ft. bluff edge setback has the potential to substantially alter the natural landform of the coastal bluff. Furthermore, grading in such close proximity to the bluff edge may destabilize the eroding coastal bluff. Thus, Special Condition #1 prohibits grading within 40 ft. of the existing bluff edge. Drought-tolerant landscaping and accessory improvements, including walkways, patios, patio covers, cabanas, windscreens, sundecks, lighting standards, walls, and temporary accessory buildings not exceeding 200 square feet in area, are permitted within 40 feet of the bluff edge, as long as they do not involve grading.

New development may be approved only if the Commission can be assured it will not result in having to propose any shore or bluff stabilization to protect the structure in the future. Special Condition #3 requires that the applicants waive any rights that may exist under Public Resources Code Section 30235 or under the certified Encinitas LCP to construct new shoreline protection to protect the new blufftop residence. In addition, the condition documents that the residence may only remain as long as it is reasonably safe from failure and erosion without having to propose any shore or bluff stabilization to protect the residence in the future. Should the blufftop residence become unstable or structurally unsound, without construction of new shoreline armoring, or if any government agency orders that the structure is not to be occupied due to failure and erosion of the bluff, the applicants must agree to remove the subject structure, in part or entirely, and remove and dispose of any debris that fall to the beach.

Special Condition #3 also requires that if the bluff recedes to within 10 feet of the foundation of the blufftop residence, the applicants must submit a geotechnical investigation to determine whether any portions of the blufftop residence are threatened and identify measures to stabilize the blufftop residence without new shoreline armoring, including, but not limited to, removal or relocation of portions of the blufftop residence. If the Executive Director determines based on the geotechnical investigation that any portion of the blufftop residence is no longer sited in a safe location, the applicant must submit an application to resolve the hazard, which could include removal of the entire blufftop residence or the threatened portion of the blufftop residence. Thus, as conditioned, approval of the existing blufftop residence will not precipitate the need for any new shoreline armoring in the future, and will allow the Commission to make various adaptive management decisions in the future for the subject site.

As proposed, the home would have an 8-ft. second story cantilever on the western side. The LCP allows for the construction of a second story cantilever of up to 20% of the distance of the bluff setback. Thus, as conditioned, the applicant has the option to construct an approximately 15.8-ft. second story cantilever (20% of 79 ft.). Special Condition #4 is required to ensure that the cantilevered portion of the home does not project over the bluff edge at any time in the future. Special Condition #4 requires that the applicants submit a monitoring program, which includes current measurements of the distance between the cantilevered portion of the home and the bluff edge. Monitoring reports are then required to be submitted to the Commission every five years and must summarize all measurements and provide analysis of trends, annual rate of retreat, stability of the overall bluff face, and impact of the cantilevered portion of the home on the natural bluff. The report shall include recommendations on how to remove any cantilevered portion of the home that is seaward of the bluff edge. Furthermore, Special Condition #4 requires that if after inspection, it is apparent that any cantilevered portion of the home is seaward of the bluff edge, the applicants shall apply for a Coastal Development Permit amendment within 90 days of submittal of the monitoring report to remove any portion of the home located seaward of the bluff edge.

As stated previously, the bluffs along the Encinitas shoreline are known to be hazardous and unpredictable. Given that the applicants have chosen to construct a residence in this location despite these risks, the applicant must assume the risks. Accordingly, Special Condition #5 requires the applicant to acknowledge the risks and indemnify the Commission against claims for damages that may occur as a result of its approval of this permit.

Drainage and runoff from the development could have an adverse effect on bluff stability because increasing the amount of ground water within the bluff can lead to bluff failures. Special Condition #1 requires that all runoff be directed away from the bluffs and toward the street and Special Condition #2 restricts the property owner from installing permanent irrigation devices anywhere on the subject lot.

Special Condition #6 requires the applicant to record a deed restriction imposing the conditions of this permit as covenants, conditions, and restrictions on the use and enjoyment of the property. This special condition is required to provide notice of potential hazards of the property and help eliminate false expectations on the part of potential buyers of the property, lending institutions, and insurance agencies that the property will be stable for an indefinite period of time or that a protective device could be constructed to protect the approved development contrary to the terms and conditions of this permit. By recording the terms and conditions of this permit against the property, future purchasers are notified in advance of their purchase of the limitations on development of the property.

Moreover, Special Condition #7 requires the applicant to record an open space restriction over the portion of the face of the bluff that is owned by the applicant, consistent with LUP Public Safety Policy 1.6(g), which prohibits future development on such bluff face, including as its location changes over time (Exhibit 10). In this way, existing and any

future property owner(s) will be made aware of the prohibition against the placement or erection of any structure on the bluff face.

Conclusion

In summary, the applicants' proposed siting of the new structure 40 feet back from the bluff edge is not consistent with the LCP requirements that new development be sited so that it will neither be subject to nor contribute to significant geologic instability throughout the life span of the project. The Commission's engineer has evaluated the slope stability and the predicated rate of erosion on the site and determined that the GSL on the subject site is approximately 79 feet back from the bluff edge and also that construction of a basement on the site would not be consistent with the LCP policies that require all new development to be built such that it could be removed if threatened by erosion. Although this setback and prohibition on construction of a basement would not allow the applicant to construct as large a home as they would like on the site, it will still allow for a reasonably sized home. Special conditions assure that, in the event that the home is threatened in the future, no future shoreline devices will be constructed and that a preferred alternative would be relocation or removal of the home, such that the development would not result in impacts to coastal resources. For all of these reasons, the Commission finds that the proposed development, as conditioned, is consistent with Public Safety Policies 1.3 and 1.6 of the LUP and Section 30.34.020(D) of the IP.

C. PUBLIC ACCESS/RECREATION

The project site is located on the blufftop on the seaward side of Neptune Avenue in Encinitas, which is designated as the first public roadway along this section of coastline. As the proposed development would occur between the first public roadway and the sea, pursuant to Section 30.80.090 of the City's LCP, a public access finding must be made that such development is in conformity with the public access and public recreation policies of the Coastal Act. Additionally, Coastal Act Section 30604(c) requires that a CDP issued for development between the first public road and the sea shall include specific findings that the development is in conformity with the Coastal Act public access and public recreation policies.

Section 30210 of the Coastal Act states:

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

Section 30211 of the Coastal Act states:

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

In addition, Section 30212 of the Act is applicable and states, in part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> *(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,*
>
> *(2) adequate access exists nearby ...*

Additionally, Section 30220 of the Coastal Act provides:

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

The beach fronting this location is used by local residents and visitors for a variety of recreational activities. As conditioned, the proposed development at the top of the bluff will not affect existing public access to the shoreline, since no public access across the property to the beach currently exists because of the hazardous nature of the approximately 93-ft. high coastal bluff. In addition, adequate access exists nearby because the Stone Steps beach access stairs are located approximately 600 ft. south of the site and Moonlight Beach Park (the main beach in Encinitas) is located approximately 0.6 miles to the south of the subject site and has a large parking lot (as well as a playground, snack bar, bathrooms, showers, fire pits, and volleyball courts). Additionally, Beacon's Beach is located approximately 0.6 miles to the north of the subject site and has a small parking lot and narrow trail down the bluff to the beach.

Public Trust

In addition to the Coastal Act policies that support public access and equal opportunities for recreation, the Commission has the responsibility protect the public trust and public trust uses.[7] Coastal Act regulations[8] define public trust lands as "all lands subject" to the common law public trust and associated with trust purposes, including recreation. In the common law, the doctrine traditionally protects in-water uses such as fishing and navigation, but has been extended to protect the environment (*Marks v. Whitney* (1971) 6 Cal.3d 251, 259-260), and associated resources that affect trust lands, such as non-navigable tributaries supplying water to a lake (*Nat'l Audubon Soc. v. Super. Ct.* (1983) 33 Cal. 419, 436-437). In some jurisdictions, the doctrine explicitly protects "dry sand"

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

[8] Cal. Code of Regs., title 14, § 13577(f).

recreation adjacent to public trust lands (*Matthews v. Bay Head Improvement Assn.* (1984) 95 N.J. 306, 331-332), on the rationale that "reasonable enjoyment" of the shore and sea cannot be realized without some use of the dry sand area (*id.* at p. 325).[9] California recognizes access as a component of public trust resources. A July 2017 report by the Stanford Center for Ocean Solutions explains that agencies "may not undertake or authorize uses of uplands without appropriate safeguards for nearby public trust resources and uses."[10] The State Lands Commission, which administers leases on public trust lands, analyzes the entire area of public trust impacts, including impacts on upland recreation.[11] Thus, use of dry land adjacent to the public trust may not interfere with recreation and other public trust uses.

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

On the assessor's parcel map, the applicant's land appears to extend to the mean high tide line, an ambulatory line where the public trust begins[12] (Exhibit 1). Sea level rise is likely to engulf this narrow beach even without any shoreline protection in place. A protective device would hasten this process because it would fix the back of the beach and prevent the accumulation of sand. Structures that fix the back of the beach stop the landward migration of the beach profile while the seaward edge continues to erode, reducing the amount of dry sandy beach available to the public.

Hard armoring can also result in nuisance conditions for neighbors who suffer increased flooding or erosion as a result of nearby armoring, as well as reduced public access along the shoreline. Other detrimental impacts may include negative visual impacts, recreation impacts (e.g., surfing limitations, reduced beach access), and interference with ecosystem service functions. The effectiveness of hard armoring to protect development will also be reduced as sea level rises and storm intensity and frequencies increase. Relatedly, shoreline armoring costs will increase over time as coastal hazards and storms cause elevated levels of damage and increasing need for repair and maintenance. Finally, the potential collision between the public trust and shoreline protection devices can create liability for homeowners who installed the devices, on the basis of trespass-- regardless of

[9] In a 2005, the same court affirmed *Matthews* and described access over uplands as "integral to the public trust doctrine." (*Raleigh Ave. Beach Assn. v. Atlantis Beach Club, Inc.* (2005) 185 N.J. 40, 53.)
[10] Center for Ocean Solutions, Stanford Woods Institute for the Environment, The Public Trust Doctrine: A Guiding Principle for Governing California's Coast Under Climate Change (2017), p. 5.
[11] See e.g., Section 3.2.4, Public Trust Impact Analysis, Broad Beach Restoration Project Revised Analysis of Impacts to Public Trust Resources and Values, July 2014, including discussion of long-term impacts on recreational use at pp. 3.2-23 to 26. Available at http://www.slc.ca.gov/Info/Reports/Broad_Beach/3.2_Recreation.pdf.
[12] The mean high tide line is the intersection of the shoreline with the elevation of the average of all high tides calculated over an 18.6-year tidal epoch. It is ambulatory due to the ordinary forces of nature, in addition to the tidal cycle and sea level rise.

whether trespass was intended. (See *United States v. Milner* (9th Cir. 2009) 583 F.3d 1174, 1190-1191.)

To prevent this conflict and maximize access to public trust lands, Special Condition #3 requires that the applicants waive any rights that may exist under Public Resources Code Section 30235 or under the certified Encinitas LCP to construct new shoreline protection to protect the new blufftop residence.

With conditions to site the structure in a safe location, waive any future rights to shoreline protection, and to conserve the bluff face in open space, the Commission can be assured that no future shoreline devices will be constructed at this location that might otherwise impact public access and recreation along the shoreline or affect the contribution of sand to the beach from the bluff. Therefore, as conditioned, the proposed development is consistent with the public access and recreation policies of the certified Local Coastal Program and Sections 30210, 30211, 30212 and 30220 of the Coastal Act.

D. VISUAL RESOURCES

The City's LCP requires that new development be designed to be compatible with existing development and preserve the scenic qualities of the surrounding bluffs.

Land Use Policy 6.5 states:

> *The design of future development shall consider the constraints and opportunities that are provided by adjacent existing development.*

Land Use Policy 6.5 states:

> *The construction of very large buildings shall be discouraged where such structures are incompatible with surrounding development. The building height of both residential and non-residential structures shall be compatible with surrounding development, given topographic and other considerations, and shall protect public views of regional or statewide significance.*

Resource Management Policy 8.5 of the LUP states, in part:

> *The City will encourage the retention of the coastal bluffs in their natural state to minimize geologic hazards and as a scenic resource. Construction of structures for bluff protection shall only be permitted when an existing principal structure is endangered and no other means of protection of that structure is possible.*

Section 30.34.020B.8 of the IP states:

> *The design and exterior appearance of buildings and other structures visible from public vantage points shall be compatible with the scale and character of the surrounding development and protective of the natural scenic qualities of the bluffs.*

The proposed residence will be located in a residential neighborhood containing one and two story single-family residences. The proposed home does not exceed the height, bulk and scale of the surrounding development and is consistent with all of the City's development standards.

The subject site slopes upward from east to west. The elevation of the sidewalk fronting the site is approximately 4 feet lower in elevation than the rear yard of the site and thus there is no potential for public views of the ocean through the side yards of the property. However, since the property is located on a bluff that overlooks the beach and ocean, the Commission has found it important to preserve views to prevent a walling-off effect of the coast from Neptune Avenue (e.g., CDP # A-6-ENC-13-0210/Lindstrom). Special Condition #2 requires that 5-ft. wide view corridors shall be created in the north and south side yards of the subject site. To preserve public views from the street, landscape materials within the view corridors shall be species with a growth potential not expected to exceed 3 feet at maturity and all proposed landscaping in these yard areas must be maintained at a height of 3 feet or lower (including raised planters). Furthermore, the condition requires that any fencing or gates within the side yard setbacks shall permit public views and have at least 75% of its surface area open to light. Five years from the date of issuance of this coastal development permit, the applicants are required to submit a monitoring report to the Executive Director that certifies whether the on-site landscaping and fencing is in conformance with the landscape plan approved pursuant to Special Condition #2.

In addition, to assure that the bluff face at the subject site remains in its natural state, Special Condition #7 requires the bluff face on the subject property be protected by the application of an open space deed restriction. The applicants' western property line extends approximately 105 feet seaward of the current "bluff edge" (as defined in Section 30.04 of the IP). The deed restriction required by Special Condition #7 applies to the bluff face as the location of the bluff edge changes over time due to the landward retreat of the bluff. In this way, the applicant and all future property owners will be advised that no development including landscape walls or other structures are permitted on the bluff face. As such, the visual quality of these natural bluffs will be protected. Therefore, as conditioned, the Commission finds that potential visual impacts associated with the proposed development have been reduced to the extent feasible; the proposed development will not adversely affect visual resources, and is consistent with LUP Policies 6.5 and 6.6, RM Policy 8.5, and Section 30.34.020B.8 of the City's IP.

E. WATER QUALITY

The City's LCP requires that preventive measures be taken to protect coastal waters from pollution. The following policies are applicable:

Resource Management Policy 2.1 states:

> *In that the ocean water quality conditions are of utmost importance, the City shall aggressively pursue the elimination of all forms of potential unacceptable pollution that threatens marine and human health.*

Resource Management Policy 2.3 states, in part:

> *To minimize harmful pollutants from entering the ocean environment from lagoons, streams, storm drains and other waterways containing potential contaminants, the City shall mandate the reduction or the elimination of contaminants entering all such waterways . . .*

The proposed development will be located at the top of the bluffs overlooking the Pacific Ocean. As such, drainage and runoff from the development could potentially affect water quality of coastal waters. The Commission has typically required that all runoff from impervious surfaces be directed through landscaping as a filter mechanism prior to its discharge into the street. In this case, however, directing runoff into blufftop landscape areas could have an adverse effect on bluff stability because increasing the amount of ground water within the bluff can lead to bluff failures. Therefore, in this case, Special Condition #1 requires that all runoff be directed away from the bluffs and toward the street. To reduce the risk associated with unattended running or broken irrigation systems, Special Condition #2 restricts the property owner from installing permanent irrigation devices anywhere on the subject lot. Reducing the potential for water to be retained on the site and directing the runoff toward the street will be more protective of coastal resources. In addition to this restriction on irrigation, Special Condition #2 also limits landscaping to native, drought-tolerant plants to minimize the amount of polluted runoff from the property to the extent feasible.

Furthermore, Special Condition #8 requires the applicants to conform to best management practices and construction responsibilities throughout construction at the project site to ensure all resulting debris are properly removed. The condition also safeguards that temporary sediment control measures are put in place. Thus, as conditioned, the Commission finds the proposed project consistent with Resource Management Policies 2.1 and 2.3 of the LCP.

E. TAKINGS

As detailed above, the project as proposed would be inconsistent with Encinitas LCP requirements to minimize risk; specifically that the home be sited in a location that will protect the home from failure and erosion hazards and safely avoid the use of shoreline protection devices throughout the lifespan of the project. However, denial of the CDP may reduce the value of the applicant's land and lead to a potential takings claim.

The applicant proposes to build home of approximately 4,700 square feet (including basement and garage) on a vacant lot. (For purposes of this analysis, the two lots proposed to be consolidated are presumed to be merged.) The lot is zoned residential and is subject to Coastal Bluff overlay requirements. Other uses that might allow economic development of the property would likely require zoning changes, including amendments to the LCP.

The Coastal Act

Denial of all or substantially all economic use of a parcel without just compensation may result in an unconstitutional "taking" of an Applicant's property. Coastal Act Section 30010 expressly forbids this result:

> *The Legislature hereby finds and declares that this division is not intended, and shall not be construed as authorizing the commission… to exercise their power to grant or deny a permit in a manner which will take or damage private property for public use, without the payment of just compensation therefore.*

Consequently, the Coastal Act imposes on the Commission the duty to assess whether its action might constitute a taking. If the Commission concludes that its action does not constitute a taking, then it may deny the project on finding that its actions are consistent with Section 30010. If the Commission determines that its action could reasonably arise to a takings claim, then the Commission applies Section 30010 to consider how the project may be approved. In the latter situation, the Commission may propose modifications to the development to minimize any Coastal Act inconsistencies, while still allowing a reasonable amount of development.

Takings Case Law

Article 1, section 19 of the California Constitution provides that "[p]rivate property may be taken or damaged for public use only when just compensation…has first been paid to, or into court for, the owner." The Fifth Amendment of the United States Constitution similarly provides that private property shall not be taken for public use, without just compensation. Once used solely for condemnation cases, the Fifth Amendment is now used to require compensation for other kinds of government actions. (See *Pennsylvania Coal Co. v. Mahon* (1922) 260 U.S. 393.) Since *Pennsylvania Coal*, most of takings cases have fallen into two categories. First, there are the cases in which government authorizes a physical occupation of property. (See, e.g., *Loretto v. Teleprompter Manhattan CATV Corp*. (1982) 458 U.S. 419.) Second, there are the cases in which government regulates the use of property. (*Yee v. Escondido* (1992) 503 U.S. 519, 522-523). Because there is no physical occupation of the land at stake, a denial of the proposed home here would be evaluated under the standards for a regulatory taking.

The U.S. Supreme Court has identified two types of regulatory takings. The first is the "categorical" formulation identified in *Lucas v. South Carolina Coastal Council* ((1992) 505 U.S. 1003, 1014.) In *Lucas*, the Court held, without examining the related public interest, that regulation that denied all economically viable use of property was a taking. (*Id*. at p. 1014.) The *Lucas* Court emphasized, however, that this category is extremely narrow, applicable only "in the extraordinary circumstance when no productive or economically beneficial use of land is permitted" or the "relatively rare situations where the government has deprived a landowner of all economically beneficial uses" or rendered it "valueless." (*Id*. at pp. 1016-1017; see also *Riverside Bayview Homes* (1985) 474 U.S. 121, 126 [regulatory takings occur only under "extreme circumstances"].) Even where the challenged regulatory act falls into this category, government may avoid a

takings result if the restriction inheres in the title of the property itself; that is, background principles of state property and public nuisance law would have allowed government to achieve the results sought by the regulation. (*Lucas,* supra, 505 U.S. at pp. 1028-1036.) The building of a home does not create a public nuisance, especially without a proposal for a shoreline protective device; however, the inquiry into background principles is more opaque. Generally, a background principle is something that the owner did not acquire the right to use on buying the land. (*Id*. at p. 1029.)

The "background principles" here include the Coastal Act and the Encinitas certified LCP. Both were in existence at the time of the applicants' purchase of the land in 1998. As the Supreme Court noted in a recent case, the homeowners "could have anticipated public regulation might affect their enjoyment of their property, as the [river] was a regulated area under federal, state, and local law long before petitioners possessed the land. (*Murr v. Wisconsin* (2017) 137 S.Ct. 1933, 1945-1946.) However, and regardless of whether the prior existence of the LCP would defeat a *Lucas* claim, denial of a CDP for the home as proposed would not amount to the "total wipeout" that usually constitutes a taking under *Lucas*. A smaller home would allow economic use of the land. (See *Palazzolo v. Rhode Island* (2001) 533 U.S. 606, 616 [rejecting the *Lucas* categorical test where property retained value following regulation, but remanding for further consideration under the *Penn Central* test].)

The second circumstance in which a regulatory taking might occur is under the three-part, ad hoc test identified in *Penn Central Transportation Co. v. New York City* (1978) 438 U.S. 104, 124 ("*Penn Central*"). Under the *Penn Central* test, a takings analysis considers the economic impact of the regulation, the interference, if any, with reasonable or "distinct" (actual) investment-backed expectations, and the character of the government action. (*Id*. at p. 134; *Ruckelshaus v. Monsanto Co*. (1984) 467 U.S. 986, 1005.) Because this test examines something lesser than a complete economic deprivation, it is generally appropriate to examine whether denial of this CDP could constitute a taking under the *Penn Central* factors.

Analysis

Economic Impact of the Regulation

A denial to build a home at all on the parcel would be a substantial deprivation of economic use. The parcel is subject to residential zoning with further requirements due to the overlay for development on the coastal bluff; thus, other kinds of uses do not appear to be feasible, at least under the City's current approach to zoning.

Investment-Backed Expectations

According to the real estate data site Datatree.com, the Martins bought the vacant land in 1998 for $315,000, and subsequently transferred their interest to a joint trust in 2010. The land has remained vacant and the Martins did not apply for a coastal development permit to build a home until late 2014; the City conditionally approved a permit for the project in April 2016. The 2017 tax assessment estimated the undeveloped land to be

worth $433,379. As of July 23, 2018, consumer real estate sites Trulia.com and Zillow.com estimate the market value of the land as $2,236,634 and $2,238,300, respectively. Trulia and Zillow also report a listing for sale of the parcel in late 2014 for $2,395,000. By any measure – including the assessor rolls that tend to downplay the current real estate market—the Martins' investor-backed expectations have been more than met, even as a vacant lot. According to Zillow.com, and as detailed in the table below, nearby blufftop properties with a home size that is comparable to the size of a home that could be constructed on the subject site with a 79 ft. bluff setback and a front yard setback reduced from 25 ft. to 10 ft. are valued at $1.66 to 4.4 million (Exhibit 11).

Estimated Value	Square Feet	Address
$1.66 million	1,680	350 Neptune Ave.
$1.96 million	2,270	492 Neptune Ave.
$2.52 million	1,857	364 Neptune Ave.
$2.78 million	2,068	438 Neptune Ave.
$2.81 million	1,659	498 Neptune Ave.
$3.3 million	2,367	510 Neptune Ave.
$3.32 million	1,999	430 Neptune Ave.
$3.07million	2,043	386 Neptune Ave.
$4.4 million	2,646	478 Neptune Ave.

*Accessed on Zillow.com, July 26, 2018

Character of the Government Action

This final prong of the *Penn Central* test has been downplayed in recent years. (See, e.g. *Lingle v. Chevron U.S.A., Inc.* (2005) 544 U.S. 528, 529 [governmental action that substantially advances a public purpose alone does not insulate the government from a takings claim]).[13] Nevertheless, it is still part of the *Penn Central* analysis, and the Coastal Commission advances a legitimate public interest when it regulates various uses according to the Chapter 3 policies of the Coastal Act, and as here, according to the policies and ordinances of the certified Encinitas LCP, specifically to ensure the safety of blufftop development and protection of the bluffs themselves. With the Coastal Act, the Legislature sought to protect natural resources and the ecological balance of the coastal zone while allowing for future development consistent with the Act's policies. (§ 30001(b), (c), (d).) The LCP in similarly, stresses safe development, while protecting natural resources. (E.g., LUP Policy 1.6, IP § 30.34.020.)

Development for the Project Allowed to Avoid a Potential Taking

Despite the validity of the LCP policies and the Coastal Act access and recreation policies, due to the substantial value of a home in relation to economic use of the property, and because the Martins' expectations of developing the property for a home are reasonable, the Commission finds that there exists the possibility of a credible takings claim if the project were to be denied.

[13] See also Lewyn, Michael, *Character Counts: The "Character of the Government Action" In Regulatory Takings Actions*, 40 Seton Hall L. Rev 597, 599 (2010) stating that *Lingle* holds that the existence of a valid public purpose *standing alone* may not justify an otherwise problematic regulation (emphasis in original).

To preclude a claim of takings and to assure conformance with California and United States Constitutional requirements, as provided by Coastal Act Section 30010, the Commission finds it appropriate to approve the construction of a home, in order to provide a reasonable economic use of the subject property. Therefore, the Commission determines that the Applicants are entitled to this type of development on their property.

Conditions of Approval

However, while approving a project that allows the owners reasonable economic use of the land, the Commission must consider alternatives or set conditions that avoid or minimize impacts on coastal resources. Setting conditions of approval does not constitute a regulatory taking, even if they cause some loss of value. (See *Penn Central,* supra, 438 U.S. at p. 130 [finding claim "untenable" that interference with an undeveloped property interest, while viable economic uses continued, constituted a taking].) Section 30010 instructs the Commission to construe the applicable Coastal Act policies in a manner that will avoid a taking of property; it does not eviscerate the policies of the LCP or the public access and recreation policies of the Coastal Act. In this case, the development may be approved only subject to several conditions, including a setback of 79 feet from the bluff and the resulting approximate maximum home size of 1,434 square feet (which may be increased with a front yard setback variance), and the waiver of future shoreline protection devices. The conditions act in tandem to ensure the home is sited safely for the lifetime of the project, to ensure stability of the bluff, and to protect the beach and the public trust.

G. LOCAL COASTAL PLANNING

In November of 1994, the Commission approved, with suggested modifications, the City of Encinitas LCP. Subsequently, on May 15, 1995, coastal development permit authority was transferred to the City. The project site is located within the City's permit jurisdiction and, therefore, the standard of review is the City's LCP.

Based on the above findings, the proposed residence, only as conditioned to require it be sited no closer than 79 feet inland of the bluff edge, can the project be found consistent with the Sections 30.34.020(D) of the City's Certified IP and Public Safety Policy 1.3 and 1.6 of the LUP, which prohibit development in hazardous locations that would require the construction of shoreline protective devices. Therefore, the Commission finds that approval of the proposed residence, as conditioned, would not prejudice the ability of the City of Encinitas to continue to implement its certified LCP or to prepare a comprehensive plan addressing the City's coastline as required in the certified LCP.

H. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit to be supported by a finding showing the permit is 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 has found that the proposed project is categorically exempt from environmental review pursuant to Sections 15303(a) [construction of a single-family residence] and 15061(b) (3) [lot consolidation would have no potential for causing a significant effect on the environment]. The proposed project, as conditioned, is consistent with the policies of the City's LCP relating to geologic stability, public access, visual resources, and water quality. In addition, as conditioned, the project is consistent with all applicable Chapter 3 policies of the Coastal Act. Mitigation measures including a required waiver of future shoreline protection will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, is the least environmentally-damaging feasible alternative and is consistent with the requirements of the City's LCP and the public access and recreation policies of the Coastal Act to conform to CEQA.

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APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

- City CDP 14-275
- Open File Report, "Landslide Hazards in the Encinitas Quadrangle, San Diego County, California", dated 1986
- Geotechnical Investigation, 440 Neptune Ave., Encinitas, California prepared by Anthony Taylor Consultants dated March 31 21, 2003
- Preliminary Geotechnical Investigation, 440 Neptune Ave., Encinitas, California prepared by Vinje & Middleton Engineering, Inc. dated April 21, 2003
- Preliminary Geotechnical Evaluation and Bluff Study, 440 Neptune Ave., Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated Aug. 24, 2010
- Geotechnical Update Evaluation, 444 Neptune Ave., Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated Sept. 23, 2014
- Geotechnical Response to Third-Party Geotechnical Review Comments, 444 Neptune Ave., Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated Oct. 19, 2015
- Slope Stability Analysis Policy for Coastal Bluffs, City of Encinitas by Geopacifica, Inc. dated November 15, 2015
- Geotechnical Response to City of Encinitas Planning and Building Department Review Comments, 444 Neptune Ave., Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated Jan. 20, 2016
- Geotechnical Response to City of Encinitas Planning and Building Department Review Comments, 444 Neptune Ave., Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated March 28, 2016
- Geotechnical Response to California Coastal Commission Appeals dated May 25, 2016, Proposed Single Family Residential Development, 444 Neptune Avenue, Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated June 15, 2016
- Geotechnical Response to California Coastal Commission Staff Report Dated June 30, 2016, Proposed Single-Family Residential Development, 444 Neptune Avenue, Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated July 12, 2016
- Addendum to Geotechnical Response to California Coastal Commission Staff Report dated June 30, 2016, Proposed Single-Family Residential Development, 444 Neptune Ave., Encinitas, San Diego County, California prepared by GeoSoils, Inc. dated Jan. 19, 2017
- Response and Clarification to California Coastal Commission Staff Report Dated June 30, 2016, Concerning Proposed Single Family Residential Development at 444 Neptune Ave., Encinitas, San Diego County, California (Martin Project); Third Party Independent Review of Bluff-Top Erosion Rate Studies Performed by GeoSoils, Inc. prepared by Dr. Benumof dated January 26, 2017
- Response and Further Clarification Regarding Technical Issues Raised By California Coastal Commission Staff With Respect To Proposed Single Family Residential Development at 444 Neptune Avenue, Encinitas, San Diego County, California (Martin Project) by Dr. Benumof dated September 27, 2017

- Residence Demolition and Basement Removal Plan by Craig Lewis dated May 8, 2018
- Geotechnical Addendum and Review of Residence Demolition and Basement Removal Plan by GeoSoils, Inc. dated May 10. 2018
- Slope Stability Analysis Policy for Coastal Bluffs, City of Encinitas by Geopacifica, Inc. dated November 15, 2015
- CoSMoS Southern California v3.0 Phase 2 projections of coastal cliff retreat due to 21st century sea-level rise, available at https://www.sciencebase.gov/catalog/item/57f4234de4b0bc0bec033f90
- Encinitas-Solana Beach Coastal Storm Damage Reduction Project, San Diego County, California, Appendix C, April 2015.
- Rising Seas in California: An Update on Sea-Level Rise Science (Griggs et al. 2017
- State of California Sea-Level Rise Guidance 2018 Update (OPC 2018)
- Johnsson, M. 2005. Establishing Development Setbacks from Coastal Bluffs
- Walkden, M.J.A., and Hall, J.W., 2005. A predictive mesoscale model of the erosion and profile development of soft rock shores. Coastal Engineering 52(6): 535-563.
- Walkden, M., and Dickson, M., 2008. Equilibrium erosion of soft rock shores with a shallow or absent beach under increased sea level rise. Marine Geology 251: 75-84.
- Final Draft Technical Report for City of Encinitas Comprehensive Coastal Bluff and Shoreline Plan Addressing Coastal Bluff Recession and Shoreline Erosion by Moffatt & Nichol Engineers in Association with Woodward-Clyde Consultants and Schmidt Design Group, Inc., dated February 1996
- U.S. Army Corps of Engineers (USACE) 2015 Final Environmental Impact Report for the Encinitas-Solana Beach Coastal Storm Damage Reduction Project
- CDP Nos:
    - F3891/Bardacos
    - F5473/Bardacos
    - F6360/Pate
    - F9833/Canter
    - 6-84-461/Denver
    - 6-86-570/Richards
    - 6-93-36/Clayton
    - 6-93-085/Auerbach
    - 6-93-131/Richards
    - 6-98-39/Denver
    - 1-12-023/Winget
    - 6-15-1717/Barr
    - A-3-SLO-15-0001/Loperena
    - A-6-ENC-02-003/Berg
    - A-6-ENC-06-101/Albani
    - A-6-ENC-09-002/Wellman
    - A-6-ENC-09-003/Wellman
    - A-6-ENC-09-040/Okun
    - A-6-ENC-09-041/Okun

  - A-6-ENC-13-0210/Lindstrom
  - A-6-ENC-16-0619/Hurst
  - A-6-ENC-16-0624/Meardon
  - Encinitas LUP and IP Approval Revised Findings Staff Report (LUP/IP Approval)
- [Zillow.com] estimated value reports for 438, 432. 430, 416, 386, 370, 364, 358, and 354 Neptune Ave., accessed [July 26, 2018].