



March 19, 2020
Delivered via email
To: The Encinitas Planning Commission

Re: Moonlight Residence Case #MULTI-002926-2019, 100 Fifth Street

Dear Commissioners,

We are writing to urge the commission to deny Coastal Development Permit #A-6-ENC-16-0068 as part of the Moonlight Residence Case for the following reasons:

1. The project is inconsistent with Encinitas Implementation Plan section 30.34.020D as the proposed setbacks are insufficient and the project will not be safe from failure and erosion.
2. Highly credible bluff retreat rates were ignored in the project's geotechnical report.
3. The project is inconsistent with California Public Resources Code Section 30065 and the California Coastal Commission's 2018 Sea Level Rise Guidance because the erosion rates used to calculate setbacks did not take into account accelerated erosion due to sea level rise.
4. The project is inconsistent with Encinitas Land Use Plan Public Safety Policy 1.6 as the proposed basement could not be easily removed.

Proposed setbacks are insufficient to ensure safety

Of major concern is the project proposal's incorrect conclusion that a 53-foot setback will render the project safe over the 75-year lifetime of the project. Per Encinitas Municipal Code (EMP), the applicant was required to submit a **geotechnical report** to certify that:

*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 (Encinitas Implementation Plan section 30.34.020D).*

The proposed blufftop setback was calculated by estimating the 75-year bluff retreat



distance using an average erosion rate of 0.51 ft/year, and then adding a safety factor of 1.5 to this 75 year retreat distance. Surfrider does not question the use of this equation as a basis for calculating the setback. However, the 75-year bluff retreat estimate in the geotechnical report relies on an erosion rate that is flawed because:

- a) the 0.51 ft/yr erosion rate excluded a recent, highly site-specific, and rigorously reviewed study that estimates much higher erosion rates in the area than are referenced in the report; and
- b) the rate fails to factor in anticipated accelerated erosion caused by sea level rise.

This results in a highly optimistic proposed setback that does not ensure project safety.

Highly Credible Erosion Estimates Are Ignored

Clearly there is discrepancy about erosion rates in this area. Engineering Design Group (the consultant) determines a bluff erosion rate based on site observations, a brief historic photograph review, and two studies by Lee (1977) and Benumof (1999) that are both over two decades old and concludes that “an erosion retreat rate of **0.33 feet per year** shall be applied” (page 106, Planning Commission Agenda Report). In the consultant’s Updated Geotechnical Foundation Recommendations Report, Engineering Design Group then states that “The building setback of 53 feet accommodates ... an erosion rate of **0.51 ft/yr**” (page 179, Planning Commission Agenda Report). This altered erosion rate is presumably based on a Coastal Commission recommendation, as cited by James Dichoso on behalf of Geopacifica in a geotechnical evaluation, which reads, “[I am] willing to approve the geotechnical report...utilizing a “coastal commission erosion rate of **.52 ft/yr**” (page 177, Staff Reports). Encinitas City Staff then references an erosion rate of **0.51 ft/yr**, and uses it as the basis for justifying the 53-foot setback cited in the Planning Commission Agenda Report¹.

Surfrider questions these different and unexplained discrepancies in estimated

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https://encinitas.granicus.com/MetaViewer.php?view_id=7&event_id=2439&meta_id=109383



erosion rates, which ultimately provide a foundation of safety for the project. Regardless of why this discrepancy exists and the lack of available information about how the 0.51 ft/yr was calculated and settled upon, these estimates ignore a 2015 Army Corps of Engineers (ACOE) study that very thoroughly and transparently demonstrates how a significantly higher blufftop erosion rate was determined for this area.

ACOE’s Environmental Impact Statement (EIS) for the 50 year Encinitas Solana Beach Coastal Storm Damage Reduction Project characterizes coastal bluff and shoreline morphology for the stretch of coast from North Encinitas to Del Mar. The study is highly credible because it is recent and site-specific; and it survived the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA) and Coastal Commission review process as well as being the basis to justify a 50-year project as represented to Congress.

ACOE’s study estimates erosion rates for five consecutive but geomorphically distinguishable areas, categorized as reaches.

Table 1.8-1 Study Area Reaches

Reach	Range		Approx. Length (mi)
	From	To	
1	Encinitas City Limit	Beacon’s Beach	1.1
2	Beacon’s Beach	700 Block, Neptune Ave.	0.3
3	700 Block, Neptune Ave.	Stone Steps	0.5
4	Stone Steps	Moonlight Beach	0.5

Encinitas & Solana Beach Shoreline Study, Final Report (p 11)

‘Reach 4,’ which stretches from South El Portal Street to D Street includes the relevant coastal stretch of property. Reach 4 is described as vulnerable to future bluff failure:

“Along the entire reach, except for the southern portion of the reach immediately adjacent to Moonlight Beach, an approximate 2 to 4- foot notch exists at the base of the bluff where notch protection measures have not been instituted. The prevalent notch development coupled with the already



over-steepened upper bluff zone is prone to future bluff failures, some of which could be catastrophic.” (page 9, Encinitas & Solana Beach Shoreline Study)

ACOE used a peer-reviewed and -approved method to determine an erosion rate of 1 foot per year in the area categorized as Reach 4 (Figure 7.2-1). This is approximately double the applicant’s geotechnical rate of erosion (0.51 ft/yr.) When multiplied over a 75 year time period and added to the geotechnical report’s calculator factor of safety (15 feet), the resulting setback is 90 feet:

$$75 \text{ years (1 foot/year)} + 15 \text{ feet} = 90 \text{ foot setback}$$

Substituting erosion rates from the highly credible ACOE study, **the applicant’s 53 foot setback is shown to be overly optimistic by a total of 37 feet.**

Table 7.2-1 Summary of Sea Cliff and Bluff-Top Erosion

Reach	Sea Cliff (ft/yr)	Bluff-Top (ft/yr)
1	0.3	0.2
2	0.4 - 0.5	0.3 - 0.5
3	1.2	1.2
4	1.1	1.0
5	0.05 - 0.6	0.2 - 0.6
6	0.2 - 1.0	0.15 - 1.0
7	Beach, no cliff or bluff	---
8	0.4 - 1.2	0.4 - 1.2
9	0.4 - 1.2	0.4 - 1.2

Encinitas & Solana Beach Shoreline Study Appendix C, (p C-37)

Erosion Rates Fail To Account for Sea Level Rise

Additionally, both the erosion studies invoked by the applicant’s geotechnical consultants and the ACOE study fail to account for accelerated future erosion rates caused by sea level rise. There is now substantial precedent for factoring sea level rise into erosion calculations, including California Public Resources Code Section 30065, which declares that sea level rise should be used as a scientific basis for coastal planning and development decisions:



The Legislature further finds and declares that sound and timely scientific recommendations are necessary for many coastal planning, conservation, and development decisions and that the commission should, in addition to developing its own expertise in significant applicable fields of science, interact with members of the scientific and academic communities in the social, physical, and natural sciences so that the commission may receive technical advice and recommendations with regard to its decisionmaking, especially with regard to issues such as coastal erosion and geology, marine biodiversity, wetland restoration, the question of sea level rise, desalination plants, and the cumulative impact of coastal zone developments. (California Public Resources Code Section 30065)

Additionally, the California Coastal Commission's 2018 Sea Level Rise Guidance outlines ten strategies for using science to guide decision-making, with Strategy 1 directing decision makers to:

Recognize and address sea level rise as necessary in planning and permitting decisions. *Address sea level rise science in all applicable coastal management and decision-making processes, including... Coastal Development Permits (CDPs)... and other Coastal Act decision processes... (SLR Policy Guidance, California Coastal Commission)²*

Sea level rise appears to have been instead been entirely ignored in this CDP and geotechnical evaluation.

The project must not require future shoreline protection

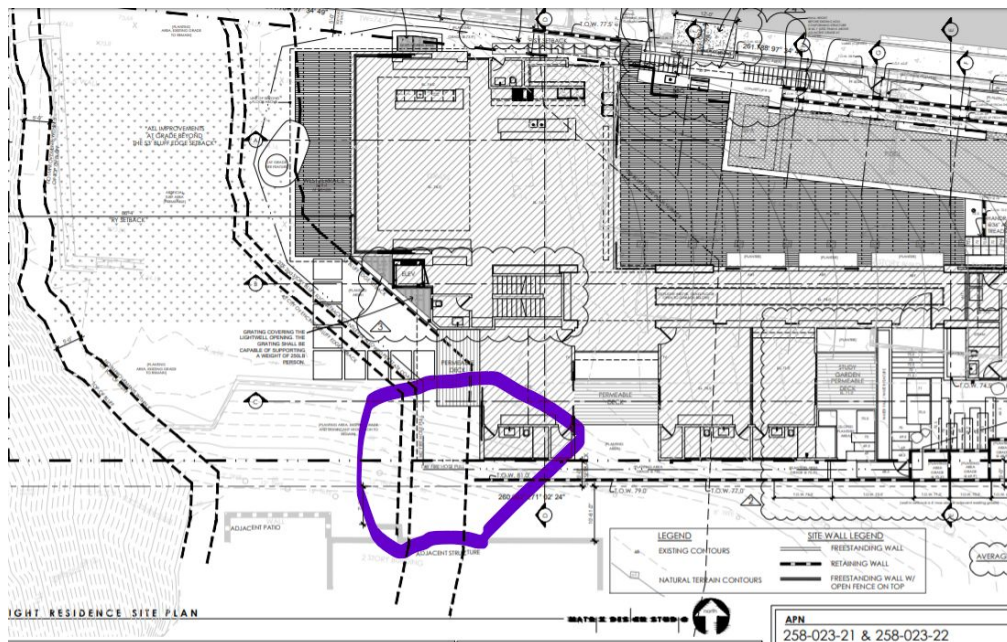
The applicant's proposal to site the new home an optimistic 53 feet back from the bluff edge does not assure stability throughout the lifespan of the project without having to propose any shore or bluff stabilization. Were this permit to be approved, Surfrider strongly recommends that approval be conditioned on never requiring shoreline protection, consistent with Section 30253(b) of the Coastal Act:

New development shall do all of the following:

²https://documents.coastal.ca.gov/assets/slr/guidance/2018/0_Full_2018AdoptedSLRGuidanceUpdate.pdf

- (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard
- (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. (Coastal Act Section 30253)

In addition, the retaining wall included in the proposed project along the southern boundary as shown in the Planning Commission Agenda Report (and in the site plan drawings) appears to be very close if not on the setback limit and could thus constitute a form of shoreline protection for new development. Coastal Act Section 30253, as cited above, prohibits this wall and any development it is designed to protect.



Attachment PC-9, page 182

Rip rap should be removed to provide lateral beach access

The proposed project constitutes new development and should prompt removal of



the existing rip rap at the base of the property's private beach access trail. This trail provides no public access benefits and its rip rap occupies public beach space (see photo below). New development requires access under Coastal Act Section 30212, which explicitly guarantees public access for all new development:

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

While the project notes that public beach and shore access and recreational opportunities exist approximately 785 feet south of the project site at Moonlight Beach, rip rap impedes lateral beach access and should be removed.



<https://www.californiacoastline.org/cgi-bin/image.cgi?image=201312144&mode=sequential&flags=0&year=current>



The proposed subterranean basement contradicts local code

The proposed project includes an 8,193 foot subterranean basement. This is inconsistent with Encinitas Land Use Plan Public Safety Policy 1.6, which states:

In all cases, all new construction shall be specifically designed and constructed such that it could be removed in the event of endangerment.

Clearly, a subterranean basement cannot easily be removed from the site.

In conclusion, the erosion rates used in the geotechnical report to determine the blufftop setback critically ignore a very important geological study in the area and fail to account for sea level rise. The resulting setback is far too optimistic, and will ultimately result in the home likely being threatened by bluff retreat before the 75-year economic life of the structure. Construction of a new home that will ultimately request shoreline protection cannot be found to be consistent with the Encinitas Implementation Plan section 30.34.020(D), as the project is not reasonably safe and the project will request additional shoreline protection. As such, the current project should be denied. Please let us know if you have any questions.

Sincerely,

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