

## Geologic Hazards

### Relevant Policies from the South Coast Area Plan:

#### **3.28 HAZARDS**

\*\*\* 30253. New development shall:

1. Minimize risks to life and property in areas of high geologic, flood and fire hazard.
2. Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

...

Bluff and cliff developments (including related storm run-off, foot traffic, site preparation, construction activity, irrigation, waste water disposal and other activities and facilities accompanying such development) shall not create or contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas.

Alteration of cliffs and bluff tops faces, or bases by excavation or other means shall be minimized. Cliff retaining wall shall be allowed only to stabilize slopes.

### Comments on proposal and consistency with LCP:

The proposed project involves a new residence, garage, decks, and parking area on a bluff-top lot, and appears to propose new concrete piles/piers westward of the bluff face. The geologic report first recommended a minimum 5-ft setback from the bluff edge, but then in an addendum revised that to find that the house could have a minimum (or negative, as it would be placed over the bluff edge) setback. We do not recommend approval of development on the bluff face, as this approach would result in landform alteration and impacts to visual resources and would likely be inconsistent with the hazard and visual resource policies of the LCP. In addition, the slope stability analysis discusses the uncertainty of drilling into the extremely hard bedrock. If piers cannot be drilled into bedrock, they may become vulnerable in the shallower terrace deposit soil layer, which would be more easily eroded away. These factors should be considered when determining whether the proposed development can be designed to be consistent with the SCAP Hazard policies.

We recommend reassessing the bluff setback to use a precautionary interpretation of the historical erosion rate (which could be a minimum of 5 feet in 50 years), and to include an additional buffer against increased erosion as a result of sea level rise (10 feet might be an appropriate number). If the site is constrained by front yard setbacks, then we would support a variance from front yard setbacks, if possible, to allow for a greater setback from the bluff edge. If the design still includes piers, then we recommend that the need for the pier/caisson foundation be clearly explained by the

applicants and in the staff report, and supported by foundation plans showing arrangement of the piers in plan view to ensure that the system is not designed to retain the bluff or to impede natural erosion processes.

The bluff report did not include a wave uprush analysis, which should be completed in order to assess what additional protection measures are needed from storm wave runup, which appears to currently impact the subject site. The wave uprush analysis should clearly incorporate SLR projections and should account for the non-linear impacts from SLR, meaning that 1 foot of SLR could result in somewhere between 2-5 feet of additional wave runup depending on shoreline type. It is our understanding (from observations from neighboring property owners) that storm events in 2023 resulted in wave overtopping at the subject lot resulting in a large patch of ice plant being washed out, therefore we believe that the site is currently impacted by wave uprush and portions of the site could be inundated during large storm events, which are expected to worsen with SLR.

Finally, if the project is below the level of the 100-year tsunami run-up elevation, then it appears to be inconsistent with the Tsunami section of the hazard policies (SCAP Chapter 3-9), which states:

### 3. Tsunamis

New development below the level of the 100 year tsunami run-up elevation describe in Tsunami Predictions for the West Coast of the Continental United States (Technical Report H-78-26 by the Corps of Engineers) shall be limited to public access, boating, and public recreation facilities, agriculture, wildlife management, habitat restoration, and ocean intakes, outfalls, and pipelines.

Thank you for the opportunity to comment on this project. We would likely recommend specific permit conditions to address the geologic/tsunami hazards and can provide example language for those if needed. We may have additional comments as the project moves forward and based on any new information received.