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Th20a

Addendum

March 5, 2019

To: Commissioners and Interested Persons

From: California Coastal Commission
San Diego Staff

Subject: Addendum to **Item Th20a**, Coastal Commission Permit Application **#A-6-ENC-16-0068 (Hurst)**, for the Commission Meeting of March 7, 2019

The purpose of this addendum is to respond to assertions made by the applicant and to make a correction and clarifications to the staff report. Staff recommends the following changes be made to the above-referenced staff report. Deletions shall be marked by a ~~strikethrough~~ and additions shall be underlined:

1. The second complete paragraph on Page 9 shall be modified as follows:

   The existing home on the site was constructed in approximately 1949, prior to passage of the Coastal Act. The existing residence is currently located approximately 25-30 feet from the bluff edge (Exhibit 2). In 1996, there was a major landslide that affected the northern edge of the bluff fronting the subject site and also involved the bluff fronting the six lots to the north. In 2000, following a bluff sloughage that threatened the structure at the top of the bluff at the subject site, the Executive Director approved an emergency permit for a 42 ft. long, 17 ft. high, reinforced concrete seawall on the beach and the construction of a below grade, approximately 40 ft. long concrete reinforced upper bluff retention system. The retention system is located approximately 0 to 22 ft. inland of the bluff edge (reference Project Plans received June 28, 2016 by Design Decisions) and consists of steel reinforced concrete caissons to a depth of 40 ft., placed approximately 8 ft. on center with tiebacks and capped by a steel and concrete plate (6-00-146-G/Brem) (Exhibit 3). Both the seawall and upper bluff retention system authorized by the emergency permit were subsequently constructed.

2. Beginning prior to the last complete paragraph on Page 17, the following findings shall be added:

   The applicants contend that no erosion setback should be required on the subject site because the existing seawall fixes the location of the bluff. To support this assertion,

the applicant cites a 1996 technical report, commissioned by the City to provide recommendations related to coastal bluff and shoreline issues. The technical report includes an exhibit showing no expected long term erosion of the bluff when a seawall is in place and also states that "*Shore protection will essentially halt coastal erosion, assuming that shore protection devices perform adequately and are maintained.*" Commission staff agrees that bluff erosion typically stops or is greatly lessened once a seawall has been constructed. However, as stated in the technical report, erosion is only halted if the seawall performs adequately and is maintained. Siting new bluff development without accounting for potential long term erosion is not consistent with the precautionary approach the Commission must take when reviewing development in hazardous areas, as is the case with the subject site. There is no certainty that the existing shoreline armoring will exist in perpetuity. The shoreline armoring may fail with age or as a result of coastal hazards. Or the existing shoreline armoring may be required to be removed in the future if it is no longer needed to protect the existing structure it was approved to protect and also is not necessary to provide stability for the structures adjacent to the subject site. Furthermore, the 1996 technical report was not incorporated into the City's certified LCP and is therefore, not the standard of the review for the subject application.

3. Beginning with the last complete paragraph on Page 26, the findings shall be modified as follows:

The applicants have asserted that the Commission has not always required that the FOS be added to the erosion rate when reviewing bluff top development in Encinitas. 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 79 ft. from the bluff edge.

Between 1995 and 2000, the City approved seven new bluff top homes (120 Neptune Avenue, 150 Neptune Avenue, 532 Neptune Avenue, 1320 Neptune Avenue, 1630 Neptune Avenue, 1360 South Coast Highway, and 432 Moonlight Lane). None of these City approvals were appealed to the Commission. In the years directly following approval of the LCP, staff commonly 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, the geotechnical claims made by these applicants may have been inconsistent with the requirements of the City's LCP and due to a lack of specific information, were not based on the cumulative setback needed to account for 75 years of expected erosion and the 1.5 Factor of Safety. In the early 2000s, the Commission 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.~~ In putting together a history of blufftop

projects in Encinitas, staff was originally unable to locate permit details associated with most of the City permits that were not appealed. The applicant has since located geotechnical reports for four of the seven structures (150 Neptune Avenue, 1320 Neptune Avenue, 1360 South Coast Highway, and 432 Moonlight Lane). However, neither the applicant nor Commission staff was able to locate geotechnical reports for three of the seven structures (120 Neptune Avenue, 532 Neptune Avenue, and 1630 Neptune Avenue).

The geotechnical reports for the homes at 150 Neptune Avenue, 1320 Neptune Avenue, and 436 Moonlight Lane found that the 1.5 FOS was located at or seaward of the bluff edge. On these three homes, two of the geotechnical reports estimated 75 years of expected erosion ranging from 16.5 to 24.8 ft. and one of the geotechnical reports provided only a general discussion of the bluff retreat rate and did not provide a specific bluff retreat estimate. Thus, based on the information in these three geotechnical reports, the 40 ft. bluff setback was approved consistent with the LCP requirement to add the 75 years of expected erosion to the 1.5 Factor of Safety setback to site the structure.

The geotechnical report for the home at 1360 South Coast Highway found the 1.5 FOS was located 40 ft. landward of the bluff edge. The geotechnical report estimated 75 years of expected erosion of 15 ft. Thus, the structure should have been required to be setback 55 ft. in order to account for the 1.5 FOS and the expected erosion over 75 years.

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.

4. Beginning after the first complete paragraph on Page 28, the following findings shall added:

The history of Commission appeals of new bluff top development in Encinitas shows a pattern of increased appeals over time. However, the pattern should not be reviewed in a static vacuum. First, an initial decision to not appeal a local approval does not mean that staff necessarily agrees with every finding made by the local government. It means that staff or the Commission, at that point in time, did not see a significant issue of consistency with the certified local coastal program or the public access policies of the Coastal Act. For example, it may not have been obvious that the particular development would set a precedent; a factor of particular importance when building in a vulnerable location. A decision by the Commission finding no significant issue likewise does not mean the Commission endorsed each finding by the local government. Not only does the Commission rely on a variety of factors when deciding if an approval raises a significant issue,

the Commission's initial review is limited in scope to those issues raised on appeal. (Pub. Resources Code, 30625(b)(2).)

Second, the Commission takes action under two crucial rubrics: liberal construction of the Coastal Act (Pub. Resources Code, § 30009), and best available science (§ 30006.5.) In combination, this means not only gathering and weighing all the pertinent facts and expert opinions, but where there is uncertainty, to favor protection of resources over other avenues. The standard of review for bluff top development in Encinitas has been the certified LCP for almost 25 years. In 1995, the concepts of global warming, sea level rise, and climate change were subject to a greater degree of scientific uncertainty, and were seldom addressed in land use decisions; now they are household terms, relied on (appropriately or not) as the explanation for extreme weather events. Even during the past few years, the best available science progressed. The Commission's Sea Level Rise Guidance relied on 2012 data from the National Resource Council; the Commission's Draft Residential Adaption Guidelines rely on a 2017 report from the California Ocean Protection Council. The pattern of increased appeals demonstrates the growing risks, and, perhaps even more importantly, the better understanding of the growing risks. To ensure the protection of coastal resources, the Commission continues to develop and refine the scientific basis for its decisions. Being perfectly consistent with the past is not only not required by any law, it would be dangerous. The Commission's mandate to minimize risk requires close consideration of all development.

5. The third complete paragraph on Page 32 shall be modified as follows:

Finally, in addition to the concerns about the siting of the structure, 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, 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 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 and geotechnical memo that they assert demonstrates how this could occur without potentially destabilizing the bluff. However, the submitted documentation presumes that the existing shoreline armoring would provide the necessary site stability to ensure the basement could be removed without impacting the overall stability of the bluff. There is no certainty that the existing shoreline armoring will exist in perpetuity. The shoreline armoring may fail with age or as a result of coastal hazards. Or the existing shoreline armoring may be required to be removed in the future if it is no longer

needed to protect the existing structure it was approved to protect and also is not necessary to provide stability for the structures adjacent to the subject site. Thus, the applicants have failed to demonstrate that the proposed home is consistent with the LCP provision requiring that it be designed and constructed so that it could be removed in the event of endangerment.

6. The attached Supplemental Technical Memorandum by Drs. Joseph Street and Lesley Ewing shall be added as Exhibit 20 to the staff report:

   Exhibit 20 – Supplemental Technical Memorandum by Drs. Joseph Street and Lesley Ewing dated March 5, 2019

7. The following geotechnical reports shall be added to the list of substantive file documents in Appendix A:

   - SGC Southland Geotechnical Consultants, 1998, "Geotechnical Evaluation of Coastal Bluff Property Proposed Single-Family Residence 1320 Neptune Avenue Leucadia Area of Encinitas, California", report dated January 16, 1998, and signed by Susan Tanges (CEG 1386) and Steven Norris (RCE 47672).
   - SGC Southland Geotechnical Consultants, 1999, "Geotechnical Evaluation of Coastal Bluff Property Proposed Single-Family Residence 150 Neptune Avenue Encinitas, California", report dated September 3, 1999, and signed by Susan Tanges (CEG 1386) and Steven Norris (RCE 47672).
   - GeoSoils, Inc., 1998, "Preliminary Geotechnical Evaluation 462 Moonlight Lane Encinitas, San Diego California", report dated May 27, 1998, and signed by Donna Gooly, Maung Maung Gyi, John Franklin (CEG 1340), and Albert Kleist (GE 476 CE 16351).
   - Southern California Soil and Testing, Inc., 1999, "Report of Geotechnical Investigation Proposed Wegner Residence", report dated January 18, 1999, and signed by Daniel Adler (RCE 36037) and John High (RGE 1237).
   - PRA request regarding Encinitas blufftop development and responses, October 8, 2018, October 18, 2018, November 1, 2018, November 2, 2018, and November 16, 2018.
   - JR Construction. Demolition and Removal Plan received March 1, 2019, signed by Joseph Pavon, General Contractor, 8 pages.
   - TerraCosta Consulting Group. February 28, 2019. Review of Demolition Plan, signed by Walter Crampton, Principal Engineer, 2 pages.

TECHNICAL MEMORANDUM BY DRS. JOSEPH STREET AND LESLEY EWING DATED MARCH 5, 2019

EXHIBIT NO.20

APPLICATION NO.

A-6-ENC-16-0068

CCC Tech Memo 3/5/2019

California Coastal Commission

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5 March 2019

MEMORANDUM

FROM: Lesley Ewing, Ph.D. PE. Sr. Coastal Engineer
Joseph Street, Ph.D. PG. Staff Geologist

SUBJECT: Removal of a Basement at 808 Neptune Ave, Encinitas, CA
CDP A-6-ENC-16-0068 Hurst)

The applicant has provided the following materials that discuss the removal potential for the proposed new two-story house, with basement, at 808 Neptune Avenue, Encinitas, CA:

- JR Construction. Demolition and Removal Plan, signed by Joseph Pavon, General Contractor, 8 pages.
- TerraCosta Consulting Group. February 28, 2019. Review of Demolition Plan, signed by Walter Crampton, Principal Engineer, 2 pages.

The submitted materials cover the general issues related to removal of any house along the bluff in Encinitas, and also provide some specifics for the proposed new residence, such as the estimate that the removal will take approximately 3 months, that the removal of foundation elements is to be undertaken with saw cutting and non-impact methods to minimize vibration, and that removal of the under-slab membrane and sand soils (part of the basement) would use small skid steer type machinery. There is little doubt that the above ground portions of the proposed new house, without a basement, could be removed safely at some point in the future. The TerraCosta memo notes that this type of demolition already occurs along the coast, in situations where an older structure is being demolished before a new, more landward house can be built. The memo does not say it, but in order for the proposed new residence to be built at 808 Neptune, the existing residence, itself, would need to be demolished. Such removal efforts are possible. Removal of a basement adds additional complications to demolition of a bluff top residence and likely would be possible provided that it the bluff has a sufficient level of stability when removal is undertaken. However, the circumstances on the site would greatly influence how and when the basement should be removed to cause the least environmental damage. If sufficient bluff stability does not exist at the time of removal, it may not feasible to safely remove the proposed basement from the bluff top site. The issues for the basement are *how* and *when* removal can be completed without damaging the bluff or adversely affecting other coastal resources.

There are several site scenarios under which removal of the new basement would be considered, and all of these include some uncertainty. Normally, the Commission reviews new development under the scenario in which there is no existing shoreline armoring or bluff retention. Another scenario is one in which the seawall and upper caisson wall remain in place, with on-going maintenance. Within this second scenario would be various levels of maintenance and even

possible modifications to the seawall and upper caisson wall to address future changes to the bluff condition.

We consider both scenarios in relation to the future removal of the proposed basement. For each of these, the conditions for removal and the timing will need to assure safe conditions for the workers and the people who are using the public beach, and minimal risk to the bluff and associated coastal resources.

The JR Construction memo covers, in general, the overall process of how the residence and basement could be removed, and addresses many of the regular issues associated with construction, such as worker health and safety, dust suppression, storm water prevention, erosion control, removal of hazardous materials, equipment and material staging, debris stockpiling and removal, and traffic control. The report identifies some of the details that would be part of the demolition and removal plan, such as storm water controls, capping the utility lines, as well as removing the foundation (i.e. bottom of the basement) by using saw cutting and non-impact methods to minimize vibration and impacts on the surrounding geological condition. The JR Construction memo report does not cover any additional structural or shoring steps that might be needed to avoid damage to the bluff face or the neighboring property; it does not address when the basement, and the residence that is on top of the basement, should be removed.

As explained in the memo from TerraCosta, the basement removal in particular is anticipated to require over-excavation and backfill with imported soils and it is expected that the City of Encinitas will require a geotechnical study to ensure that the demolition work "will not directly or indirectly cause, promote, or encourage bluff erosion or failure, either on site or for an adjacent property." Also, according to TerraCosta, the geotechnical report that is likely to be required for demolition will also "express a professional opinion as to whether the proposed demolition can be designed or located so that it will neither be subject to, nor contribute to, significant future geologic instability." TerraCosta also notes that geotechnical concerns could modify the design and location of the demolition. For example, in our opinion it is likely that temporary shoring, incremental removal or other measures could be necessary to minimize future bluff instability or the potential for impacting neighboring properties. Such measures would not prevent the removal of the basement area, but they would add to the removal steps, add to the estimated 3-month removal schedule noted in the JR Construction memo, and add to the importance of removing the residence and basement while there is adequate stability at the bluff face to allow for safe removal of the basement elements and recompaction of the fill material. It is possible that the geotechnical report for basement removal would find that the structure cannot be removed safely. As is discussed below, it will be important that the triggers for removal be sufficiently precautionary that the basement will be removed while removal can be done safely.

For the scenario in which the new residence and basement are constructed without reliance upon the existing shore protection and upper bluff retention system, and assuming a location on the site could identified that would provide some acceptable level of current and future stability, the removal triggers would be based on the time or site conditions that provide sufficient stability for work to be undertaken safely. While the ultimate criterion for site instability is for there to be no remaining setback or for the Factor of Safety to approach 1.0, but because there is a great deal of uncertainty in how bluff retreat will progress, the Commission has recognized that the thresholds

for considering building removal or shore protection should be linked to less extreme conditions. These conditions are often taken as when the Factor of Safety is 1.1 or 1.2, or, recognizing that erosion is usually episodic, the point at which another round of episodic retreat would put the development in jeopardy. Trigger points for these conditions would need to be established if this scenario best fits the situation at the site.

For the scenario that relies upon the existing seawall and upper caisson wall, the conditions for removal would be based upon their continued efficacy, ability to be maintained and changing shoreline conditions. Although the hazard analysis found that direct wave attack is not predicted to exacerbate the ongoing bluff erosion at the site, like the coastal bluffs elsewhere in Encinitas, the bluff at the project site is subject to subaerial erosion of the mid-and upper bluff, as evidenced by visible rilling, small to moderate failure scarps, and active sand flows. Eventually, the upper caisson wall may be exposed and eventually undermined. Safe removal of the house and basement would need to occur while the upper bluff caisson wall and the lower seawall remain in place and while they are able to provide some remaining site stability. The removal triggers could be the same as for the unprotected bluff, possibly, a minimal Factor of Safety and sufficient material fronting the upper caisson wall to withstand one additional round of episodic loss without jeopardizing stability of the wall. The timing for removal of the basement will depend upon the future effectiveness of the protective structures, which will in turn depend upon their repair and maintenance. Thus the timing for removal could vary greatly.

In conclusion, we concur that the proposed residence can be demolished sometime in the future and that the basement can also be removed provided that it the bluff has a sufficient level of stability when removal is undertaken. This removal may be complicated in the future if additional bluff instability occurs. The triggers for removal of the basement in particular would be needed. The triggers for removal will depend upon whether the new development will be able to rely upon the seawall and upper bluff caisson wall and whether these protective structures will be maintained in the future. For both scenarios, the removal triggers need to be carefully developed to occur in coordination with the removal of the seawall and/or upper bluff caisson wall, and timed to assure that there is still sufficient site stability to allow for safe removal operations and avoid substantial damage to the bluff.

Please do not hesitate to contact us with any further questions.

Sincerely,

Lesley Ewing, Ph.D., PE, F.CE
Senior Coastal Engineer

Joseph Street, Ph.D., PG
Staff Geologist