CALIFORNIA COASTAL COMMISSION SAN DIEGO DISTRICT OFFICE 7575 METROPOLITAN DRIVE, SUITE 103 SAN DIEGO, CA 92108-4402 VOICE (619) 767-2370 FAX (619) 767-2384



6-21-0067 (Laughlin & Greenberg)

December 17, 2021

EXHIBITS

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SOIL ENGINEERING CONSTRUCTIONING.

July 12, 2019

TO:	California Coastal Commission	
	San Diego Office	
FROM:	Bob Trettin, agent	
	325 and 327 Pacific Avenue	
RE:	Sand Fee Worksheet; 325 and 327 Pacific Aver	nue

SAND MITIGATION FEE WORKSHEET

325 & 327 Pacific Avenue, Solana Beach

100' Seawall

W	= 100.00
E	= 0 (project is subject to a beach recreation / public access fee)
v	= 0.90
R	= 0.4 (from GeoSoils Coastal Hazard Report for 235, 241 and 245 Pacific Avenue; 2017)
L	= 20 yrs.
S	= 0.74 (from USACOE 2015 Solana Beach Study)
Hs	= 35 80
Hu	= 4 5 0
Rcu	= 0.4
Rcs	= 0
Vb =	(S x W x L) X [(R x hs) + (1/2hu x (R +{Rcu-Rcs}))] / 27
	Where $(S \times W \times L) = (.74 \times 100 \times 20) = 1,480$
Vb =	(1,480) x [{(R x hs) + (1/2hu x (R + (Rcu-Rcs))}] / 27
Vb =	1,749.68 cu. yds. 1,754.07
Vt= Vb	+ Vw + Ve = 1,749.68 1,754.07

VAC= Volume of Sand Already Contributed Through Failure
VAC (1) =Sand included in above formula already deposited on beach via erosion / sloughage: 670 <u>cubic yards</u> (as noted in project-proposed amount of imported material to reconstruct failed portions of bluff.

VAC= 670 cu.yds. X .74 = 498.76

VT Sub-Total = VT- VAC = 1,754.07 - 498.76 = 1,255.31 cu. Yds.

Vt Final = 1,255.31

EXHIBIT NO. 4	
APPLICATION NO. 6-21-0067	
Sand Mitigation	
Calculation	
California Coastal Commission	

560 N. Hwy 101, Suite 5, Encinitas, California (760) 633-3470 Fax (760) 633-34

*Corrections in red made by Commission staff

SOIL ENGINEERING CONSTRUCTIONING.

- M= Vt Final x C (less remaining 3 years of pre-paid sand mitigation associated with CDP #6-00-138; Special Condition #2)
- M= 1,255.31 cu. yds. X 14.47** = \$18,164 less <u>\$2,082</u> credit for payment made through 2023 as a condition of CDP #6-00-138 (CDP 6-00-138, Special Condition #2 required asand mitigation fee of \$15,268 over 22 years, which equates to \$694 per year, or \$2,082 for the remaining 3 years; March, 2020 through March, 2023).

M= \$16082.34.00 (\$18,184 - \$2,082 credit for payment made for 2020 to 2023)

NOTE: Current Sand Bids from Qualified Contractors are Attached to this Worksheet

Respectfully submitted,

SOIL ENGINEERING CONSTRUCTION, INC.

John Niven, R.C.E.



Table 1 – Public Recreation Impact Mitigation Fee Schedule				
Permit Year	Initial Area Rate (Per SF)	Bluff Retreat Rate (Per LF)		
2020	\$131	\$737		
2021	\$134	\$780		
2022	\$136	\$825		
2023	\$139	\$874		

<u>Seawall Initial Area</u> = (Seawall Width x Seawall Length) + (Notch Width x Notch Length)

<u>Public Recreation Fee</u> = ((Seawall Initial Area x Initial Area Rate) + (Seawall Length x Bluff Retreat Rate)

Seawall Width (ft.)	2.33
Seawall Length (ft.)	100
Notch Width (ft.)	1.5
Notch Length (ft.)	100
Seawall Initial Area (sq. ft)	383
Initial Area Rate (\$/sq. ft.)	139
Bluff Retreat Rate (\$/linear ft.)	874
Public Recreation Fee (\$)	\$140,637.00





December 9, 2021

Delivered via email

To: Karl Schwing District Director, San Diego Coast California Coastal Commission

Re: Application No 6-21-0067, Item F18a, 325 & 327 Pacific Avenue, Solana Beach

Dear Mr. Schwing,

The Surfrider Foundation is a grassroots non-profit environmental organization dedicated to the protection of our ocean, waves, and beaches. The San Diego Chapter has long been dedicated to the protection of San Diego's 70 miles of coastline and is opposed to the ongoing armoring of the bluffs in Solana Beach. We thank staff for their sincere efforts to place a number of important special conditions on this permit for a seawall in Solana Beach. However, we respectfully request that the conditions for approval of this permit be further strengthened to reflect the extraordinary nature of what is going on in the city of Solana Beach.

The staff report accurately reports the terrible situation the City currently finds itself in by stating:

"The work will be located entirely on the publicly owned beach and bluff across two properties developed with residential structures." (page 2)

Despite the fact that the bluffs are publicly owned in Solana Beach, a majority of the bluffs in the city are already armored. In essence, public property has been taken for use by private property owners. The continued construction, repair, and enlargement of seawalls in Solana Beach is putting the beach itself in grave danger of disappearing. Favoring private property owners is contrary to the City's duty to protect beaches and bluffs as public land. It is also contrary to the intent of the California Constitution, which includes the beach as part of the public trust. The beach and bluffs are meant to be protected for the enjoyment of all, not just the few coastal property owners.

EXHIBIT NO. 7
APPLICATION NO. 6-21-0067
Surfrider Letter
California Coastal Commission

We ask that Staff's Recommendation be modified to include the following:

- The permit should be conditioned such that <u>no new development or additions</u> may be permitted at the subject properties in the future, as it is not possible to site new development where it will be safe from erosion without a need for shoreline armoring. This should include any redevelopment or remodels even under the 50% redevelopment threshold.
- 2) The <u>public recreation fee should be recalculated</u> to include the cave that would collapse absent the proposed protection.

The current lower bluff seawalls will fail without upper bluff protection

It is likely the present seawall would fail absent the new construction resulting in the immediate formation of new beach area. The applicant's geotechnical report is quite conclusive that there is a very low factor of safety at both 325 and 327 Pacific Ave, even in the presence of the existing lower bluff seawall. <u>Their analysis as represented below shows that the failure planes are well within the footprint of the homes.</u>

Phone: 858.800.2282 | info@surfriderSD.org | www.surfridersd.org 3900 Cleveland Ave Ste. 201, San Diego, CA 92103 It is clear from the applicant's own geotechnical report¹ that these houses should never have been built here in the first place. The fact that the factor of safety is so low <u>even in the presence of the lower bluff seawall</u> should demonstrate to even unskilled observers that the bluff is not a safe place for development. The geotechnical report brings this point home:

The ultimate exposure and failure of the friable clean sand layer near the base of the Pleistocene section is imminent and will result in a significant acceleration of upslope failure that will impact the subject residences. As noted in the original geotechnical analysis for these properties, this sand layer is similar in appearance, and in the failure mechanism, to those previously identified in the vicinity of and adjacent to Pacific Avenue in this coastal stretch of Solana Beach. The exposed clean sand lense below the subject properties cannot stand vertical for any extended length of time. The relatively weak (low shear strength) clean sand lense is susceptible to massive failure due to wind, water and vibrations.²

This same report details the public danger presented by these properties:

The section along the beach-level area does not have ample space between the cliff face and the ocean during high tide periods to suggest that there is an area where a person could always walk and not be in a region of threat. Generally, beach hazards include complete collapse of sea caves and undercut and over steepened sea cliffs, as well as massive slope failures of the sea bluff above the bedrock sea cliff. Potential failures along the top of the sea cliff/sea bluff profile may extend landward from about a few to more than 20, or more, feet.³

<u>It is also notably incorrect that the geotechnical report assumes the presence of the</u> <u>current lower-bluff seawall when calculating safety factors</u>. Including bluff stabilization structures in a stability or safety determination is contrary to the City's certified Land

¹ The geotechnical reports considers only two layers: 1) The clean sands layer and, 2) The upper Pleistocene formation. A proper boring prior to initial construction would have found these materials present in addition to the fact that it was well known in the literature and photographic evidence.

² Page 34, Solana Beach staff report accessed at <u>https://solanabeach.govoffice3.com/vertical/Sites/%7B840804C2-F869-4904-9AE3-720581350C</u> <u>E7%7D/uploads/Item_B.2._Report_(click_here)_05-22-19_-_O.pdf</u>

³ Pages 43-44, Solana Beach staff report

Use Plan (LUP), which is very clear that any <u>safety determination cannot take any bluff</u> retention devices into account:

Policy 4.18: A legally permitted bluff retention device shall not be factored into setback calculations....

Given the clear impacts to the public beach and the unsafe condition presented by these properties, no further development on these properties should be allowed at any threshold.

No new development should be allowed for 327 or 325 Pacific Ave at any threshold

We request that Special Condition 4 be further strengthened to clarify that no new development of any type will be allowed, as <u>there is no safe location where any new</u> <u>development could be sited absent the seawalls</u>. The geotechnical report is clear on the low factors of safety on the site, even taking the lower bluff seawall into account. The City's LUP is clear that any new development must be set back a safe distance from the bluff's edge and that <u>safety determination cannot take into account any</u> <u>bluff retention devices</u>:

Policy 4.18: A legally permitted bluff retention device shall not be factored into setback calculations....

Policy 4.17: New development shall be set back a safe distance from the bluff edge, with a reasonable margin of safety, to eliminate the need for bluff retention devices to protect the new improvements. All new development, including additions to existing structures, on bluff property shall be landward of the Geologic Setback Line (GSL) as set forth in Policy 4.25

Policy 4.25: All new bluff property development shall be set back from the bluff edge a sufficient distance to ensure that it will not be in danger from erosion and that it will ensure stability for its projected 75-economic life. To determine the GSL, applications for bluff property development must include a geotechnical report, from a licensed Geotechnical Engineer or a certified Engineering Geologist, that establishes the Geologic Setback Line (GSL) for the proposed development. This setback line shall establish the location on the bluff top stability where can be reasonably assured for the economic life of the development...

To clarify that there is no safe location for any new development on either property, we suggest that Special Condition 4 be reworded as follows (additions underlined,

strikethroughs suggest text to remove):

Special Condition 4: Reliance on Permitted Shoreline Armoring: No future development that is not otherwise exempt from coastal development permit requirements, including additions, major structural alterations, or <u>any</u> redevelopment of the structures on the subject bluff top properties <u>may be</u> <u>permitted as there is no safe location on the property to site any development</u>. <u>may rely on the permitted shoreline armoring to establish geologic stability or</u> <u>protection from hazards</u>. (page 12)

The Public Recreation Fee must account for original impacts starting from 2001

Proper calculation of the Public Recreation Impact Mitigation Fee (PRF) should account for the area which has been impounded behind the emergency seawall since 2001. This is especially true as f the lower seawall is inherently dependent on the upper bluff protection which is being proposed by this permit. If the proposed upper bluff protection were not constructed, the entire bluff and cave would collapse. This fee calculation must take into account any notch or sea cave landward of the sea wall per Appendix C of the city's certified Land Use Plan (LUP):

The entire area of a seacave or notch located landward of the proposed Bluff Retention Device shall be considered imminently subject to failure and be included in the mitigation calculation. In addition, the area of any seacaves or notches that have been previously infilled with erodible concrete, located landward of the proposed bluff retention device, which are no longer allowed to erode as originally approved, shall be included in the mitigation calculation.

Due to the existing seawall and its proposed expansion, the back of the beach has been fixed since 2001, and the width of the sandy beach will continue to narrow over time. As sea level continues to rise, it is increasingly important that the bluffs be able to retreat if we want any chance of continuing to have beaches in Solana Beach. <u>As</u> <u>currently proposed</u>, the fee only addresses the width of the seawall and does not account for the width of the beach that has been impounded since 2001, when the <u>original wall was constructed</u>.

Appendix C of the City's LUP provides example scenarios for calculating the PRF, and these examples provide allowances for various scenarios. Example 1 calculates the PRF in the absence of a seacave or notch, while Examples 2-4 calculate the PRF taking into account the area of a landward seacave or notch, regardless of whether or not it has previously been infilled.

"Example 1: In the year 2016, construction of a typical 2 ft. wide by 50 ft. long seawall with no seacave/notch landward of proposed seawall.

Initial Area = 2' x 50' = 100 sq. ft. Initial Area Rate = 100 sq. ft. x \$121 = \$12,100 Bluff Retreat Rate = 50 ft. X \$600 = \$30,000 PRF = \$12,100 + \$30,000 = \$42,100 PRF = ((2 ft. x 50 ft.) x \$121 per sq. ft.) + (50 ft. x \$600 per linear ft.) = \$42,100

Example 2: In the year 2016, construction of a typical 2 ft. wide by 50 ft. long seawall with a 10 ft. deep by 20 ft. long seacave/notch (which has not been previously infilled) landward of proposed seawall.

PRF = (((2 ft. x 50 ft.) + (<u>10 ft. x 20 ft.</u>)) x \$121 per sq. ft.) + (50 ft. x \$600 per linear ft.) = \$66,300

Example 3: In the year 2016, construction of a typical 2 ft. wide by 50 ft. long seawall with a <u>2 ft. deep by 20 ft. long seacave/notch</u> (which has not been previously infilled) landward of proposed seawall.

PRF = (((2 ft. x 50 ft.) + (<u>2 ft. x 20 ft</u>.)) x \$121 per sq. ft.) + (50 ft. x \$600 per linear ft.) = \$46,940

Example 4: In the year 2016, construction of a typical 2 ft. wide by 50 ft. long seawall with a <u>2 ft. deep by 20 ft. long seacave/notch</u> that has been previously infilled with erodible concrete landward of proposed seawall. PRF = (((2 ft. x 50 ft.) + (<u>2 ft. x 20 ft.</u>)) x \$121 per sq. ft.) + (50 ft. x \$600 per linear ft.) = \$46,940"

The example PRF calculations make clear that if the seawall is preventing the natural creation of additional beach space that would have occurred via seacave or notch collapse, even if the seacave/notch has already been filled, that needs to be considered as lost public beach space and should be mitigated for in the calculation of the PRF.

One way to include the beach area lost since 2001 in the calculation of the PRF would be to use the erosion that would have occured over the 20 years since the seawall was placed at a rate of 0.4 ft/year.

Initial beach space impounded by the seawall in 2001

From the city's LUP Appendix C, the formula to calculate the PRF is as follows:

Initial Area x Initial Area Rate

+ Bluff Retreat Length x Bluff Retreat Rate

Permit Year	Initial Area Rate (per LF)	Bluff Retreat Rate (per LF)
2023	\$139	\$874

Total Public Recreation Fee

The 'Initial Area Rate' is used to mitigate for the physical space that the seawall takes up on the beach immediately upon its construction. This occurred in 2001 and is illustrated above in red as the 2,400 ft² of beach area that is occupied by the seawall.

When calculating the Initial Area Rate now, we should also take into account the area that was lost to the public over the last 20 years, given that 20 years of natural bluff retreat has already been prevented. This is shown above as the blue area that represents beach space that should exist, but was not created as the seawall prevented the natural landward migration of the bluffs at a rate of 0.4 ft/year, for 20 years, or 8 feet. <u>Put another way, the seawall should not just be considered to be 2.4 ft</u> <u>deep for purposes of the Initial Area Rate calculation, but should instead be</u> <u>considered 10.4 ft deep (2.4 ft + 8 ft) for the Initial Area Rate Calculation.</u>

	Staff Report Calculation	Adjusted Calculation
Initial Area (Seawall)	100 ft. x 2.33 ft. = 233 ft ²	100 ft x (2.33 ft + 8ft) = 1,033 ft ²
Initial Area Rate	233 ft ² x \$139 = \$32,387.00	1,033 ft ² x \$139 = \$143,587
Bluff Retreat Rate	100 ft. x \$874 = \$87,400	100 ft. x \$874 = \$87,400
Public Recreation Fee	\$32,387.00 + \$87,400.00 = \$119,787.00	\$143,587 + \$87,400 = \$230,987

The Public Recreation Fee should then be calculated as follows:

By considering the area that would have been created by the retreating bluff, much like considering a filled notch, the Initial Area Rate Calculation should take this history of impounded beach space into account to correctly determine the PRF and compensate the public for lost beach space.

Support for staff's conditions and recommendations

We support staff's strong statements about 327 Pacific Ave not being an existing structure and therefore does not have a right to shoreline armoring:

"...the home at 327 Pacific Avenue is not an existing structure for purposes of Section 30235 of the Coastal Act because it was permitted and built after 1976, thereby postdating the enactment of the California Coastal Act. Thus the Commission is not required to approve shoreline armoring to protect the blufftop residence at 327 Pacific Avenue." (page 2)

We also support staff's Special Condition #17 that requires mean high tide line (MHTL) surveys and monitoring to track the migration of the mean high tide line over time. This is crucial as the MHTL is ambulatory and will move landward with climate change and sea level rise. As was correctly pointed out in a recent report to the Commission entitled "Protecting Public Trust Resources in the Face of Sea Level Rise", the location and extent of tidelands can vary significantly over time. It would greatly benefit the Commission to identify a 'zone of concern' rather than a static line. This way, when the tide line eventually reaches the toe of the bluff (thereby causing a seawall to exist on

public lands), the Commission has the tools and ability to appropriately protect public tidelands.

Importantly, shore protection does not stop the formation of public trust land behind it had the shore protection not been present. Per a recent article "Climate Change and the Public Trust Doctrine: Using an Ancient Doctrine to Adapt to Rising Sea Levels in San Francisco Bay" [Golden Gate U. Envtl. LJ 3 (2009): 243], *United States vs Milner* and other cases were cited to support the assertion that shore protection does not stop the formation of public trust land behind it had the shore protection not been present.

In the case of sea level rise in Solana Beach intersecting seawalls, the nuisance is now access to State Public Trust Tidelands and not City land. Therefore, the State or Coastal Commission or State Lands Commission will have the ability to impose retreat or inverse condemnation of seawalls that impair the public trust.

In summary, we support Staff's recommendation if the special conditions are strengthened to correctly calculate the Public Recreation Fee and make it clear that no development of any type may be permitted, as there is no safe location to site any new development.

Thank you for your consideration of our comments.

Sincerely,

Jim Jaffee & Kristin Brinner Residents of Solana Beach Beach Preservation Committee San Diego Chapter, Surfrider Foundation

Laura Walsh California Policy Manager Surfrider Foundation