



# City of Santa Barbara California

## PLANNING COMMISSION STAFF REPORT

**REPORT DATE:** March 7, 2024  
**AGENDA DATE:** March 14, 2024  
**PROJECT ADDRESS:** 1553 Shoreline Drive (PLN2023-00353)  
**TO:** Planning Commission  
**FROM:** Planning Division  
 Megan Arciniega, Senior Planner I  
 Barbara Burkhart, Assistant Planner

### I. PROJECT DESCRIPTION

The project site is a 22,961-square-foot vacant bluff-top parcel located along the ocean side of Shoreline Drive, at the terminus of Loyola Drive. The proposal is to construct a new 3,905-square-foot two-story single-unit residence, 488-square-foot attached two-car garage, and a 509-square-foot detached Accessory Dwelling Unit (ADU). See Exhibits B and C for project plans and applicant letter, respectively.

### II. REQUIRED APPLICATIONS

The discretionary applications required at this hearing under the purview of the Planning Commission are:

- A. A Coastal Development Permit to allow the proposed development in the Appealable Jurisdiction of the City's Coastal Zone (SBMC §28.44.060);

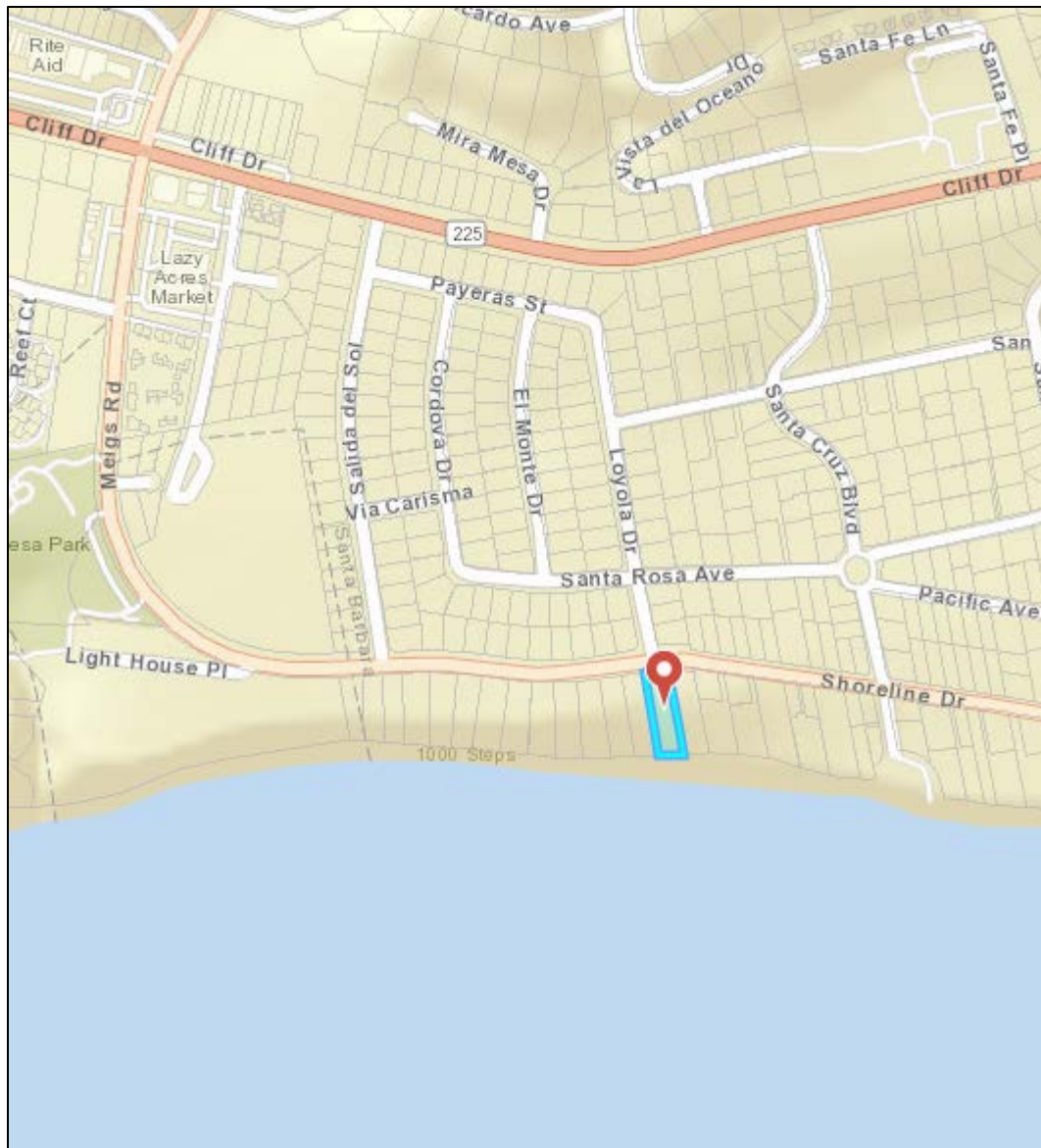
Project Design Approval and Final Design Approval by the Single Family Design Board (SFDB) will also be required for the project at a later date, if the Planning Commission approves the project (SBMC Chapter 30.220).

**APPLICATION DEEMED COMPLETE: FEBRUARY 1, 2024**

**DATE ACTION REQUIRED: MAY 1, 2024**

### III. RECOMMENDATION

If approved as proposed, the project would conform to the City's Zoning and Building Ordinances and policies of the LUP. In addition, the size and massing of the project are consistent with the surrounding neighborhood. Therefore, staff recommends that the Planning Commission approve the project, making the findings outlined in Section IX of this report, and subject to the conditions of approval in Exhibit A.



*Vicinity Map: 1553 Shoreline Drive*

#### **IV. BACKGROUND**

On August 13, 2020, the Planning Commission approved a Coastal Development Permit (CDP) under a previous Planning Application (PLN2019-00326) for the site; the project consisted of a new two-story single-unit residence, attached garage, and swimming pool. On October 3, 2019, the Planning Commission unanimously determined that a public scenic view corridor does not extend through the site, as part of a Concept Review hearing for the project.

The property has since been sold and is now under new and separate ownership. The proposed project is a different proposal from that previously approved, and the applicant is seeking a new CDP.



**V. SITE INFORMATION AND PROJECT STATISTICS**

**A. SITE INFORMATION**

<b>Applicant:</b>	Trish Allen; SEPPS, Inc.	
<b>Property Owner:</b>	Suzanne and Peter Hooper	
<b>Site Information</b>		
<b>Parcel Number:</b>	045-173-043	<b>Lot Area:</b> 0.52 acres
<b>Coastal Land Use Plan:</b> Residential (Max 5 du/acre)		<b>Zoning:</b> E-3/S-D-3
<b>Existing Use:</b> Vacant		<b>Topography:</b> 46% average slope
<b>Adjacent Zoning and Land Uses</b>		
North:	E-3/S-D-3	Public Right-of-Way (Shoreline Drive)
East:	E-3/S-D-3	Single-Unit Residential
South:	N/A	Pacific Ocean/ Beach
West:	E-3/S-D-3	Single-Unit Residential

**B. PROJECT STATISTICS**

	<b>Existing</b>	<b>Proposed</b>
<b>Living Area</b>	N/A	3,905 sf
<b>Garage</b>	N/A	488 sf
<b>Detached ADU</b>	N/A	509 sf

**VI. POLICY AND ZONING CONSISTENCY ANALYSIS**

**A. ZONING ORDINANCE CONSISTENCY**

The proposed project is compliant with all applicable zoning regulations.

<b>Standard</b>	<b>Requirement/ Allowance</b>	<b>Existing</b>	<b>Proposed</b>
<b>Setbacks</b> -Front -Interior, East -Interior, East ADU -Interior, West -Interior, South	20'-0" 6'-0" 4'-0" 6'-0" 6'-0"	N/A	20'-0" 7'-9" 4'-0" 7'-5" ~194'-0"
<b>Building Height</b>	30 feet	N/A	26'-11" Primary Residence 14'-1" ADU
<b>Parking (Vehicle)</b>	Two covered spaces	N/A	Two covered spaces
<b>Open Yard</b>	1,250 sf	N/A	1,250 sf

<b>Floor-to-Lot Area Ratio (FAR)</b>	4,430 sf maximum Guideline	N/A	4,902 sf is 104% of the maximum Guideline FAR
<b>Lot Coverage</b>			
-Building	N/A		5,092 sf 22.2%
-Paving/Driveway	N/A	N/A	1,590 sf 6.9%
-Landscape/ Permeable Paving	N/A		16,279 sf 70.9%

# **1. ACCESSORY DWELLING UNIT STANDARDS**

Accessory Dwelling Units (ADUs) in the City's coastal zone are permitted in single-unit and multi-unit residential zones, provided they comply with applicable zoning requirements outlined in Santa Barbara Municipal Code (SBMC) Chapter 28.86.

## a. Unit Size

For a new detached ADU to be constructed on a single-unit residential lot, the required minimum size is 150 square feet, and the maximum size is 1,200 square feet lots 15,000 square feet or greater. The proposed ADU would be 509 square feet which is consistent with this standard.

## b. Building Height

The height maximum of the E-3 zoning district is 30 feet. The proposed ADU would be approximately 14 feet in height.

## c. Open Yard

No open yard areas are required for ADUs per SBMC Ch. 28.86. The open yard requirement for the primary residence is 1,250 square feet, of which the project complies.

## d. Setbacks

The ADU meets the required 4-foot interior setback per SBMC Ch. 28.86.

## e. Parking

The ADU is located within a half mile (approximately 0.4 miles) of a public transit stop and is outside of any Key Public Access Areas as delineated in Figure 3.1-2 of the Coastal Land Use Plan. Therefore, no parking is required for the ADU.

# **B. COASTAL CONSISTENCY**

The project site is located within the Appealable Jurisdiction of the Coastal Zone and must be found consistent with the California Coastal Act and the City's Local Coastal Program which implements the California Coastal Act.

The project site is also located within the Mesa Component Area of the City's Coastal Land Use Plan, which spans eastward from Arroyo Burro Beach to the westerly boundary of Santa Barbara City College and extends inland to Cliff Drive. The primary land use of this area is small-lot, single-unit residential. The area includes the Douglas

Family Preserve, La Mesa Park, Shoreline Park, and beach areas below the bluffs. Major coastal issues include infill residential additions that obstruct public scenic views, and beach and coastal bluff erosion.

The majority of the site, and the entire project area of work, is located in Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops) as shown on the Interim Shoreline Hazards Screening Areas Map. The remainder of the site is located within Potential Shoreline Hazards Screening Area 3 (Coastal Bluff-Faces); no work is proposed in this area as part of the site.

The surrounding neighborhood includes a mix of one- and two-story residences with garages, featuring a varied and eclectic range of architectural styles. The neighborhood is well-established and includes mature trees and landscaping throughout.

## **1. CALIFORNIA COASTAL ACT**

### **a. Coastal Act 30244 (Archaeological Resources)**

The project site is in the Prehistoric Watercourse Buffer archaeological sensitivity zone. A Phase I Archaeology Report was prepared for the previously approved project and concluded that the potential for the project to impact archeological resources is low, and therefore not anticipated. However, the standard conditions alerting to the possibility of discovery during ground disturbance were recommended, consistent with the City's Master Environmental Assessment Guidelines for Archeological and Historic Resources. The report was reviewed by the City Environmental Analyst, Julia Pujo, and the Historic Landmarks Commission Advisory Member, Dr. Glassow, and accepted by the Historic Landmarks Commission. The City's standard discovery conditions are included in the draft conditions of approval (Exhibit A), per the recommendation. Therefore, the project avoids disturbance to archeological resources, consistent with this policy.

### **b. Coastal Act Section 30250 (Location; existing developed area)**

*New residential, commercial, or industrial development, except provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have a significant adverse effects, either individually or cumulatively, on coastal resources.*

The project site is located within an existing, developed single-family neighborhood comprised of one- and two-story residences, with access to adequate public services including public transportation, fire prevention, police, and utility services. Therefore, no significant adverse effects to the coast or coastal resources are anticipated. Furthermore, no significant impact related to services is anticipated because the project is within an developed residential neighborhood.

### **c. Coastal Act Section 30251 (Scenic and visual qualities)**

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

The subject site is a vacant lot located on the ocean side of Shoreline Drive where it intersects with the southern terminus of Loyola Drive. The site slopes gently from Shoreline Drive toward the bluff edge, where it drops steeply to the beach below. As stated above, it has been determined that a public scenic view corridor does not extend through the site.

The closest public scenic view corridor is that of the Pacific Ocean as taken from Santa Cruz Lane, looking south to the blufftop overlook at its southern terminus. Views of the bluff and beach from the Thousand Steps public access stairs, and views along the sandy beach below can also be taken from the overlook. The intersection of Shoreline Drive and Santa Cruz Lane is approximately 725 feet east of the subject site.

Additionally, the project has been reviewed by the SFDB, which is specifically tasked with ensuring single-family development is compatible in design and material, and in size, bulk, and scale with its surrounding neighborhood, in addition to preserving the City's visual resources. The project received positive comments in terms of neighborhood compatibility; site planning; architectural style; size, bulk, and scale; landscape; and materials, finishes, and colors. The project would return to the SFDB for Project Design Approval and Final Approval if the CDP is granted.

Therefore, the project is consistent with this scenic and visual qualities policy. Additional discussion is outlined below in Section V.B.2.c, regarding consistency with applicable City visual resource policies.

d. Coastal Act Section 30253 (Minimization of adverse impacts)

*New development shall do all of the following: (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.*

The proposed residence and ADU are located within the Potential Shoreline Hazards Screening Area 4 (Coastal Bluff Tops) and AE FEMA Flood Zone designation. The site is not located within any high fire hazard area.

The City contracted with ENGEO consultants, and Walter Crampton, PE, GE, D.CE., conducted a geotechnical peer review of the plans, Preliminary Geologic Investigation prepared by Adam Simmons, dated May 7, 2020, an Updated Geologic Investigation prepared by Adam Simmons, dated November 1, 2023, and Slope Stability Analysis prepared by Braun & Associates, Inc., dated November 5, 2019. Mr. Crampton also reviewed relevant California Coastal Records Project historical photographs of the site. ENGEO found the project to be in conformance with the requirements of the LCP, specifically Section 5.1 – Coastal Hazards (including Section 5.1-70 – Coastal Bluff Edge Development Buffer Calculation), the California Coastal Commission (CCC) accepted standards, and the applicable California Building Code (CBC). Therefore, risks to life and property would be minimized and the project would not create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area; and would not require construction of protective devices along the bluff.

## 2. COASTAL LAND USE PLAN

### a. Policy 3.1-29 Off-Street Parking for New Development and Substantial Redevelopment

*Parking standards in the Zoning Ordinance are designed to ensure sufficient off-street parking is provided for new development and substantial redevelopment so as to avoid significant adverse impacts to public access to the shoreline and coastal recreation areas. Off-street parking for new development and substantial redevelopment, therefore, shall be consistent with the Zoning Ordinance.*

The proposed development is compliant with parking requirements of the Zoning Ordinance for single-unit residential development. Two covered vehicle spaces are proposed for the residence, to be located in a garage. No parking is proposed or required for the ADU because it is located outside key public access parking areas, on a lot to be developed with a single residential unit, and within a one-half mile walking distance of a public bus stop (MTD stop at Cliff Drive and Salida Del Sol). Therefore, the project provides adequate parking for the site and development in accordance with this policy.

### b. Policy 4.2-22 Storm Water Management

*All development shall be planned, sited, and designed to protect the water quality and hydrology of coastal waters in accordance with the requirements of the City's Storm Water Management Program...*

The project is a Tier 3 Storm Water Management Program (SWMP) project and must comply with Best Management Practices (BMPs) to ensure water treatment and retention on-site. A SWMP Report dated August 9, 2023, prepared by Flowers & Associates, Inc., was submitted as part of this application. To satisfy the Tier 3 requirement, the project includes a detention/ infiltration basin and three bioretention areas. The bioretention basins would filter runoff at a rate of



at least 5 inches per hour, and provide storage and additional treatment; they would also be designed to treat and detain peak flows with controlled outlets that would slowly release detained stormwater. The project has been reviewed by the City's Creeks Division. Confirmation of Tier 3 compliance would be required by Creeks prior to Final Approval consideration of the SFDB.

c. Visual Resources

The following policies relate to visual resources and are applicable to the project.

*Policy 4.3-3. Design Review.*

*Policy 4.3-4. Visual Evaluation Requirement.*

*Policy 4.3-5. Protection of Scenic Resources and Public Scenic Views.*

*Policy 4.3-6. Obstruction of Scenic View Corridors.*

*Policy 4.3-7. Compatible Development.*

*Policy 4.3-11. Landscape Plans Required.*

*Policy 4.3-13. Tree Protection and Replacement.*

*Policy 4.3-18. Coastal Bluff Top Development.*

*Policy 4.3-29. Visual Evaluation Requirement.*

The closest public scenic view corridor is that of the Pacific Ocean to the south as taken from Santa Cruz Lane toward the blufftop overlook at its southern terminus. Views of the bluff and beach from the Thousand Steps public access stairs, and views along the sandy beach below can also be taken from the overlook. The intersection of Shoreline Drive and Santa Cruz Lane is approximately 725 feet east of the subject site.

While portions of Shoreline Drive are designated as a Potential City Scenic Route by the LUP (Figure 4.3-1 Scenic Resources), the subject property is not located within the designated Scenic Route.

The northernmost portion of the site is, however, located within a positive background "cone of view" as described in LUP Figure 4.3-1., which means a desirable view, beyond 300 feet, can be taken through this area from a station point near the subject site. A positive view can be either natural landforms, such as the mountains, foothills, ocean, lagoon and plant materials, or manmade such as significant buildings, harbor, and boulevards. In this case, it is a view of the distant ocean to the east as taken from Shoreline Drive; it has been established that a public scenic view corridor does not extend through the site.

Given the location of location of the development on the private property, views of the distant ocean to the east along Shoreline Drive, would not be affected.



*Cone of View at Subject Site as shown in LUP Figure 4.3-1 Scenic Resources*

d. Shoreline Hazards

The following policies relate to shoreline hazards and are applicable to the project.

Policy 5.1-29. Interim Shoreline Hazards Screening Areas Map.

Policy 5.1-32. Development Standards for Potential Shoreline Hazards Screening Area 3 (Coastal Bluff Faces) on the Interim Shoreline Hazards Screening Areas Map.

Policy 5.1-33. Development Standards for Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops) on the Interim Shoreline Hazards Screening Areas Map.

Policy 5.1-38 Landscaping, Watering, Weight, and Drainage on Coastal Bluff Faces and Coastal Bluff Edge Development Buffers

Policy 5.1-39 Drainage Systems on Lots Containing Coastal Bluff Faces and Coastal Bluff Edge Development Buffer

The majority of the site, and the entire project area of work, is located in Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops) as shown on the Interim Shoreline Hazards Screening Areas Map. The remainder of the site is located within Potential Shoreline Hazards Screening Area 3 (Coastal Bluff-Faces); no work is proposed in this area as part of this project.

The subject site is a vacant lot located on the ocean-side of Shoreline Drive where it intersects with the southern terminus of Loyola Drive. The site slopes gently from Shoreline Drive toward the bluff edge, where it drops steeply to the beach below. The proposed development of a new two-story, single-unit residence, attached two-car garage, and detached ADU, would occur outside of the Coastal Bluff Edge Development Buffer calculated for the subject property (76-feet from the coastal bluff edge). No alteration of existing landforms is required or proposed.

Preliminary landscape plans have been prepared for the project. The overall plant palette consists of indigenous species in combination with Mediterranean plants suitable to the Santa Barbara regional climate. All plant material would be low-water and low-maintenance. All landscape improvements within the Coastal Bluff Edge Development Buffer would be designed in compliance with LUP Policies 5.1-33C and 5.1-38. Furthermore, all landscaping would be required to comply with the City's Landscape Design Standards, including 80% low water use plant material, and approved by the SFDB at Final Approval.

A SWMP Report dated August 9, 2023, prepared by Flowers & Associates, Inc., was submitted as part of this application. To satisfy the Tier 3 requirement, the project includes a detention/ infiltration basin and three bioretention areas. The bioretention basins would filter runoff at a rate of at least 5 inches per hour, and provide storage and additional treatment; they would also be designed to treat and detain peak flows with controlled outlets that would slowly release detained stormwater. The project has been reviewed by the City's Creeks Division. Confirmation of Tier 3 compliance would be required by Creeks prior to Final Approval consideration of the SFDB.

A Geotechnical peer review of the documents and plans below, as well as relevant California Coastal Records Project historical photographs of the site, has been conducted for the project by ENGEO consultants. The project was found to be in conformance with the requirements of the LCP, specifically Section 5.1 – Coastal Hazards, the CCC accepted standards, and the applicable CBC and that the proposed drainage development is feasible from a geologic perspective.

## **VII. DESIGN REVIEW**

This project was reviewed by the SFDB on October 9, 2023 (meeting minutes are attached as Exhibit D), where it received positive comments in terms of site planning; architectural style; materials, finishes, and colors; and neighborhood compatibility. Furthermore, the Board was supportive of the 104% FAR (guideline) after review of a FAR Study. The applicant team received comments regarding the amount of plaster return on one window; consultation with the property owner of the adjacent residence to the west, regarding placement of a second-floor deck; and a solution to potential noise impacts associated with the covered loggia as it relates to the adjacent residence to the east. The project would return to the SFDB for Project Design Approval and Final Design Approval at a later date, if the CDP is granted.

## **VIII. RECOMMENDED FINDINGS**

The Planning Commission finds the following:

**A. ENVIRONMENTAL REVIEW (CEQA GUIDELINES; SBMC §22.100.160.C)**

The project is exempt from further environmental review under Sections 15303 [New Construction or Conversion of Small Structures] of the California Environmental Quality Act (CEQA) Guidelines because the project involves construction of a single-unit residence and Accessory Dwelling Unit in a residential zone. Based on review of the project, there would be no significant project-specific or cumulative impacts on the environment as a result of the project, the project does not have the potential to damage scenic highways or historic resources, and the project site is not identified as a hazardous waste site. The project site does not contain any historical resources. The project location is not within a particularly sensitive environment with mapped resources. None of the exceptions to the exemption under CEQA Guidelines Section 15300.2 apply.

**B. COASTAL DEVELOPMENT PERMIT (SBMC §28.44.150)**

1. The project is consistent with the policies of the California Coastal Act, as described in Section V.B.1 of the Staff Report dated March 7, 2024. The proposal will not result in any adverse effects related to coastal resources, including public views, public access to the coast, and coastal bluff erosion. The proposed development is located within an existing developed area that is able to accommodate it, and both parking and open space minimum requirements will be met.
2. The project is consistent with all applicable policies of the City's Local Coastal Plan, all applicable implementing guidelines, and all applicable provisions of the Municipal Code, as described in Section V.B.2 of the Staff Report dated March 7, 2024. The proposed development is compatible with surrounding neighborhood development; will not impact any public views or public access to the coast; will not contribute to erosion, geologic instability or destruction of the site; and will not contribute to safety or drainage hazards on the site.

Exhibits:

- A. Conditions of Approval
- B. Project Plans: Available for viewing online at [SantaBarbaraCA.gov/PC](https://SantaBarbaraCA.gov/PC)
- C. Applicant's Letter, dated December 15, 2023
- D. SFDB Minutes, dated October 9, 2023
- E. Applicable Coastal Policies
- F. Preliminary Geologic Investigation prepared by Adam Simmons, dated May 7, 2020
- G. Updated Geologic Investigation prepared by Adam Simmons, dated November 1, 2023
- H. Slope Stability Analysis prepared by Braun & Associates, Inc., dated November 5, 2019
- I. Updated Geotechnical Peer Review by ENGEO, dated November 28, 2023

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## **DRAFT PLANNING COMMISSION CONDITIONS OF APPROVAL**

1553 SHORELINE DRIVE  
COASTAL DEVELOPMENT PERMIT  
MARCH 14, 2024

In consideration of the project approval granted by the Planning Commission and for the benefit of the owner(s) and occupant(s) of the Real Property, the owners and occupants of adjacent real property and the public generally, the following terms and conditions are imposed on the use, possession, and enjoyment of the Real Property:

A. **Order of Development.** In order to accomplish the proposed development, the following steps shall occur in the order identified:

1. Obtain all required design review approvals.
2. Submit an application for and obtain a Building Permit (BLD) to perform rough grading. Comply with condition E “Construction Implementation Requirements.”
3. Record any required documents (see Recorded Conditions Agreement section).
4. Permits.
  - a. Submit an application for and obtain a Building Permit (BLD) for construction of approved development and complete said development.
  - b. Submit an application for and obtain a Public Works Permit (PBW) for all required public improvements and complete said improvements.

Details on implementation of these steps are provided throughout the conditions of approval.

B. **Recorded Conditions Agreement.** The Owner shall execute a *written instrument*, which shall be prepared by Planning staff, reviewed as to form and content by the City Attorney and Community Development Director, recorded in the Office of the County Recorder, and shall include the following:

1. **Approved Development.** The development of the Real Property approved by the Planning Commission on March 14, 2023, is limited to construction of 3,905-square-foot, two-story, single-unit residence with an attached 488-square-foot two-car garage and a 509-square-foot Accessory Dwelling Unit (ADU) as described in the Applicant Letter dated August 24, 2023, and as shown on the plans signed by the chairperson of the Planning Commission on said date and on file at the City of Santa Barbara.
2. **Uninterrupted Water Flow.** The Owner shall allow for the continuation of any historic flow of water onto the Real Property including, but not limited to, swales, natural watercourses, conduits and any access road, as appropriate.
3. **Recreational Vehicle Storage Limitation.** No recreational vehicles, boats, or trailers shall be stored on the Real Property unless enclosed or concealed from view as approved by the Single Family Design Board (SFDB).
4. **Landscape Plan Compliance.** The Owner shall comply with the Landscape Plan approved by the Single Family Design Board (SFDB). Such plan shall not be

modified unless prior written approval is obtained from the SFDB. The landscaping on the Real Property shall be provided and maintained in accordance with said landscape plan, including any tree protection measures. If said landscaping is removed for any reason without approval by the SFDB, the owner is responsible for its immediate replacement.

5. **Storm Water Pollution Control and Drainage Systems Maintenance.** Owner shall maintain the drainage system and storm water pollution control devices in a functioning state and in accordance with the Storm Water BMP Guidance Manual and Operations and Maintenance Procedure Plan approved by the Creeks Division. Should any of the project's surface or subsurface drainage structures or storm water pollution control methods fail to capture, infiltrate, and/or treat water, or result in increased erosion, the Owner shall be responsible for any necessary repairs to the system and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the Owner shall submit a repair and restoration plan to the Community Development Director to determine if an amendment or a new Building Permit and Coastal Development Permit is required to authorize such work. The Owner is responsible for the adequacy of any project-related drainage facilities and for the continued maintenance thereof in a manner that will preclude any hazard to life, health, or damage to the Real Property or any adjoining property.
6. **Future Threats to Development.** By acceptance of this permit, the Owner agrees, on behalf of him/herself and all successors and assigns, that the Owner shall remove the development authorized by this permit, including the residence, garage, Accessory Dwelling Unit, pool, spa, foundations, patios, etc. if any government agency has ordered that the structure(s) is not to be occupied or is otherwise unsafe due to imminent threat of damage or destruction from any shoreline hazard, including but not limited to waves, erosion, storm conditions, liquefaction, flooding, sea level rise. In the event that portions of the development fall to the bluff face, the beach, or are swept to another location before they are removed, the Owner shall remove all recoverable debris associated with the development and lawfully dispose of the material in an approved disposal site. Such removal shall require authorization through an emergency and/or regular Coastal Development Permit.
7. **Prohibition on Shoreline Protection Devices.** Construction of new or substantially redeveloped shoreline protection devices in the future to protect the new development or substantial redevelopment development from any shoreline hazard is prohibited.
8. **Prohibition on Slope Stabilization Devices.** Construction of new or substantially redeveloped slope stabilization devices in the future to protect the new development or substantial redevelopment development from any shoreline hazard is prohibited.
9. **Ownership Limitation.** This Coastal Development Permit is limited to only that time period that the land underlying the development is under the ownership of the applicant or successor in interest. If the public trust boundary moves landward

resulting in the development encroaching onto public trust lands, the Coastal Development Permit will expire and the development on such public trust lands must be removed at the property owner's expense, unless the property owner obtains appropriate legal authorization from the trustee of the public trust lands (e.g., City of Santa Barbara or State Lands Commission) and obtains a new Coastal Development Permit from the California Coastal Commission to authorize any development of public tidelands. Authorization for such development on public trust lands is restricted by the Coastal Act and Public Trust Doctrine and may not be allowed if the proposed use significantly interferes with public access or other public trust uses.

10. **Coastal Hazards Liability Limitation.** The Owner understands and is advised that the project site and public services to the site (utilities, roads, etc.) may be subject to beach erosion, bluff erosion, coastal bluff slope failure, coastal flooding, wave impacts, or other extraordinary hazards associated with development on a coastal beach, coastal bluff face or top, or in a coastal flood and/or wave impact area, now and in the future, factoring in the effects of sea level rise. The Owner acknowledges that public services to the site may not be maintained in perpetuity due to the impacts of sea level rise. The Owner assumes the risks of injury and damage from such hazards in connection with the permitted development. The Owner unconditionally waives any present, future, and unforeseen claims of damage or liability on the part of the City for injury or damage arising from the aforementioned or other natural hazards and relating to this permit approval, as a condition of this approval. Further, the Owner agrees to indemnify and hold harmless the City and its employees for any alleged or proven acts or omissions and related cost of defense, related to the City's approval of this permit and arising from the aforementioned or other natural hazards whether such claims should be stated by the Owner's successor-in-interest or third parties.
11. **Development within Coastal Bluff Edge Development Buffer.** Improvements within the Coastal Bluff Edge Development Buffer, including but not limited to landscape improvements, and hardscape (permeable and non-permeable), shall be subject to the following conditions:
  - a. Proper maintenance of the improvements is required so that they do not become a safety issue or begin to affect erosion, geologic instability, or destruction of the site or surrounding area;
  - b. No mechanized construction equipment shall be used for installation or removal;
  - c. Removal is required when erosion reaches less than 5 feet from the improvements or if the improvements are otherwise deemed unusable or unsafe due to imminent threat of damage or destruction from geologic instability, erosion, flooding, wave impact hazards, or other hazards associated with development on a coastal bluff or beach; and

- d. The approval of the minor improvements is limited to a maximum 20 years from the issuance of the Coastal Development Permit. When the permit term ends, the improvements shall be removed unless re-evaluation of the site shows the minor improvements still meet the standards and conditions listed above and a new Coastal Development Permit is approved to retain the minor improvements. The Owner shall have the burden of following up with the City regarding this condition.
  - e. The improvements must comply with Land Use Plan policy 2.1-19 related to nonconforming development.
- 12. **Geotechnical Liability Limitation.** The Owner understands and is advised that the site may be subject to extraordinary hazards from landslides, erosion, retreat, settlement, or subsidence and assumes liability for such hazards. The Owner unconditionally waives any present, future, and unforeseen claims of liability on the part of the City arising from the aforementioned or other natural hazards and relating to this permit approval, as a condition of this approval. Further, the Owner agrees to indemnify and hold harmless the City and its employees for any alleged or proven acts or omissions and related cost of defense, related to the City's approval of this permit and arising from the aforementioned or other natural hazards whether such claims should be stated by the Owner's successor-in-interest or third parties.
- 13. **Areas Available for Parking.** All parking areas and access thereto shall be kept open and available in the manner in which it was designed and permitted.
- C. **Design Review.** The project, including public improvements, is subject to the review and approval of the Single Family Design Board (SFDB). The SFDB shall not grant project design approval until the following Planning Commission land use conditions have been satisfied.
  - 1. **Tree Protection.** All trees not indicated for removal on the approved site plan / landscape plan shall be preserved, protected, and maintained.
  - 2. **Appropriate Plants on Bluff Top.** Special attention shall be paid to the appropriateness of the existing and proposed plant material on the bluff. All new plantings shall be native, drought tolerant vegetation.
  - 3. **Irrigation System.** The irrigation system shall be designed and maintained with the most current technology to prevent a system failure. Watering of vegetation in the Coastal Bluff Edge Development Buffer shall be kept to the minimum necessary for plant establishment with easily removable drip irrigation with a dedicated shut-off valve outside the Buffer. No irrigation is allowed on the bluff face or within the Coastal Bluff Edge Development Buffer.
  - 4. **Screened Backflow Device.** The backflow devices for fire sprinklers, pools, spas and/or irrigation systems shall be provided in a location screened from public view or included in the exterior wall of the building, as approved by the SFDB.

5. **Location of Dry Utilities.** Dry utilities (e.g. above-ground cabinets) shall be placed on private property unless deemed infeasible for engineering reasons.
- D. **Requirements Prior to Permit Issuance.** The Owner shall submit the following, or evidence of completion of the following, for review and approval by the Department listed below prior to the issuance of any permit for the project. Some of these conditions may be waived for demolition or rough grading permits, at the discretion of the department listed. Please note that these conditions are in addition to the standard submittal requirements for each department.
1. **Public Works Department.**
    - a. **Shoreline Drive Public Improvements.** The Owner shall construct new concrete curb/gutter and driveway apron as shown on Grading and Drainage Plan C-2.1. The overflow for onsite storm water shall discharge to the public right-of-way per City Standards. Any work in the public right-of-way requires a Public Works Permit.
    - b. **Construction-Related Truck Trips.** Construction-related truck trips for trucks with a gross vehicle weight rating of three tons or more shall not be scheduled during peak hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) in order to help reduce truck traffic on adjacent streets and roadways.
  2. **Community Development Department.**
    - a. **Recordation of Agreements.** The Owner shall provide evidence of recordation of the written instrument that includes all of the Recorded Conditions identified in condition B “Recorded Conditions Agreement” to the Community Development Department prior to issuance of any building permits.
    - b. **Drainage and Water Quality.** The project is required to comply with Tier 3 of the Storm Water BMP Guidance Manual, pursuant to Santa Barbara Municipal Code Chapter 22.87 treatment, rate and volume. The project shall comply with the Storm Water Treatments as provided in the Tier 3 Storm Water Management Report dated July 1, 2022, prepared by Ashley & Vance Engineering, Inc. The project plans for grading, drainage, stormwater facilities and treatment methods, and project development shall be subject to review and approval by the City Building Division and Public Works Department. Sufficient engineered design and adequate measures shall be employed to ensure that no unpermitted construction-related or long-term effects from increased runoff, erosion and sedimentation, urban water pollutants (including, but not limited to trash, hydrocarbons, fertilizers, bacteria, etc.), or groundwater pollutants would result from the project.

For any proprietary treatment devices that are proposed as part of the project’s final Storm Water Management Plan, the Owner shall provide an Operations and Maintenance Procedure Plan consistent with the manufacturer’s specifications (describing schedules and estimated annual



maintenance costs for pollution absorbing filter media replacement, sediment removal, etc.). The Plan shall be reviewed and approved by the Creeks Division for consistency with the Storm Water BMP Guidance Manual and the manufacturer's specifications.

After certificate of occupancy is granted, any proprietary treatment devices installed will be subject to water quality testing by City Staff to ensure they are performing as designed and are operating in compliance with the City's Storm Water MS4 Permit.

- c. **Design Review Requirements.** Plans shall show all design, landscape and tree protection elements, as approved by the appropriate design review board and as outlined in Section C "Design Review," and all elements/specifications shall be implemented on-site.
- d. **Conditions on Plans/Signatures.** The final Resolution shall be provided on a full-size drawing sheet as part of the drawing sets. The following statement shall be signed prior to issuance of and permits: The undersigned have read and understand the required conditions and agree to abide by any and all conditions which are their usual and customary responsibility to perform, and which are within their authority to perform.

Signed:

_____		_____
Property Owner		Date
_____	_____	_____
Contractor	Date	License No.
_____	_____	_____
Architect	Date	License No.
_____	_____	_____
Engineer	Date	License No.

- E. **Construction Implementation Requirements.** All of these construction requirements shall be carried out in the field by the Owner and/or Contractor for the duration of the project construction, including demolition and grading.

- 1. **Construction Contact Sign.** Immediately after Building permit issuance, signage shall be posted at the points of entry to the site that list the contractor(s) name, telephone number(s), construction work hours, site rules, and construction-related conditions, to assist Building Inspectors and Police Officers in the enforcement of the conditions of approval. The font size shall be a minimum of 0.5 inches in height. Said sign shall not exceed six feet in height from the ground if it is free-standing or placed on a fence. It shall not exceed 24 square feet if in a multi-family or commercial zone or six square feet if in a single-family zone.

2. **Construction Storage/Staging.** Construction vehicle/ equipment/ materials storage and staging shall be done on-site. No parking or storage shall be permitted within the public right-of-way, unless specifically permitted by the Public Works Director with a Public Works permit.
3. **Construction Parking.** During construction, free parking spaces for construction workers shall be provided on-site or off-site in a location subject to the approval of the Public Works Director.
4. **Air Quality and Dust Control.** The following measures shall be shown on grading and building plans and shall be adhered to throughout grading, hauling, and construction activities:
  - a. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.
  - b. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.
  - c. If importation, exportation and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.
  - d. Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.
  - e. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.
  - f. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading of the structure.
  - g. All portable diesel-powered construction equipment shall be registered with the state's portable equipment registration program OR shall obtain an APCD permit.

- h. Fleet owners of mobile construction equipment are subject to the California Air Resource Board (CARB) Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, § 2449), the purpose of which is to reduce diesel particulate matter (PM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles. For more information, please refer to the CARB website at [www.arb.ca.gov/msprog/ordiesel/ordiesel.htm](http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm).
  - i. All commercial diesel vehicles are subject to Title 13, § 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.
  - j. Diesel construction equipment meeting the California Air Resources Board (CARB) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.
  - k. Diesel powered equipment should be replaced by electric equipment whenever feasible.
  - l. If feasible, diesel construction equipment shall be equipped with selective catalytic reduction systems, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California.
  - m. Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
  - n. All construction equipment shall be maintained in tune per the manufacturer's specifications.
  - o. The engine size of construction equipment shall be the minimum practical size.
  - p. The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time. Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.
5. **Unanticipated Archaeological Resources Contractor Notification.** Standard discovery measures shall be implemented per the City master Environmental Assessment throughout grading and construction: Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and the Owner shall retain an archaeologist from the most current City

Qualified Archaeologists List. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

A final report on the results of the archaeological monitoring shall be submitted by the City-approved archaeologist to the Environmental Analyst within 180 days of completion of the monitoring and prior to any certificate of occupancy for the project.

- F. **Prior to Certificate of Occupancy.** Prior to issuance of the Certificate of Occupancy, the Owner of the Real Property shall complete the following:
1. **Repair Damaged Public Improvements.** Repair any public improvements (curbs, gutters, sidewalks, roadways, etc.) or property damaged by construction subject to the review and approval of the Public Works Department per SBMC §22.60. Where tree roots are the cause of the damage, the roots shall be pruned under the direction of a qualified arborist.
  2. **Complete Public Improvements.** Public improvements, as shown in the public improvement plans or building plans, shall be completed.
- G. **General Conditions.**
1. **Compliance with Requirements.** All requirements of the city of Santa Barbara and any other applicable requirements of any law or agency of the State and/or any government entity or District shall be met. This includes, but is not limited to, the Endangered Species Act of 1973 [ESA] and any amendments thereto (16 U.S.C. § 1531 et seq.), the 1979 Air Quality Attainment Plan, and the California Code of Regulations.
  2. **Approval Limitations.**

- a. The conditions of this approval supersede all conflicting notations, specifications, dimensions, and the like which may be shown on submitted plans.
  - b. All buildings, roadways, parking areas and other features shall be located substantially as shown on the plans approved by the Planning Commission.
  - c. Any deviations from the project description, approved plans or conditions must be reviewed and approved by the City, in accordance with the Planning Commission Guidelines. Deviations may require changes to the permit and/or further environmental review. Deviations without the above-described approval will constitute a violation of permit approval.
3. **Litigation Indemnification Agreement.** In the event the Planning Commission approval of the Project is appealed to the City Council, Applicant/Owner hereby agrees to defend the City, its officers, employees, agents, consultants and independent contractors ("City's Agents") from any third party legal challenge to the City Council's denial of the appeal and approval of the Project, including, but not limited to, challenges filed pursuant to the California Environmental Quality Act (collectively "Claims"). Applicant/Owner further agrees to indemnify, defend, and hold harmless the City and the City's Agents from any award of attorney fees or court costs made in connection with any Claim.

Applicant/Owner shall execute a written agreement, in a form approved by the City Attorney, evidencing the foregoing commitments of defense and indemnification within thirty (30) days of being notified of a lawsuit regarding the Project. These commitments of defense and indemnification are material conditions of the approval of the Project. If Applicant/Owner fails to execute the required defense and indemnification agreement within the time allotted, the Project approval shall become null and void absent subsequent acceptance of the agreement by the City, which acceptance shall be within the City's sole and absolute discretion. Nothing contained in this condition shall prevent the City or the City's Agents from independently defending any Claim. If the City or the City's Agents decide to independently defend a Claim, the City and the City's Agents shall bear their own attorney fees, expenses, and costs of that independent defense.

#### Time Limits:

#### NOTICE OF COASTAL DEVELOPMENT PERMIT TIME LIMITS:

The Planning Commission action approving the Coastal Development Permit shall expire two (2) years from the date of final action upon the application, per Santa Barbara Municipal Code §28.44.230, unless:

1. A Building permit for the work authorized by the coastal development permit is issued prior to the expiration date of the approval.



2. The Community Development Director grants an extension of the coastal development permit approval. The Community Development Director may grant up to three (3) one-year extensions of the coastal development permit approval. Each extension may be granted upon the Director finding that: (i) the development continues to conform to the Local Coastal Program, (ii) the applicant has demonstrated due diligence in completing the development, and (iii) there are no changed circumstances that affect the consistency of the development with the General Plan or any other applicable ordinances, resolutions, or other laws.



# City of Santa Barbara California

**Exhibit B:** Project Plans Dated for the March 14, 2024 Planning Commission Meeting, are available electronically for view online at: [SantaBarbaraCA.gov/PC](https://SantaBarbaraCA.gov/PC) and will be transferred the city's [Archived Agendas & Documents system](#) after the hearing.



15 December 2023

Planning Commission  
City of Santa Barbara  
630 Garden Street  
Santa Barbara, CA 93101

**RE: Coastal Development Permit for 1553 Shoreline Drive (APN 045-173-043);  
PLN 2023-00353, Project Description/Applicant Letter**

Dear Commissioners:

On behalf of the applicant, we are pleased to provide the following project description associated with the development of a two-story single-family residence, an attached garage a detached accessory dwelling unit (ADU) along with associated landscape improvements at the subject property.

#### Existing Setting/Background

The subject site located at 1553 Shoreline Drive, APN 045-173-043, is a vacant property in the East Mesa neighborhood, is zoned E-3/SD-3, Single-Family Residential Zone/Appealable Jurisdiction of the Coastal Zone and also in the Hillside Design District. The property is generally flat in the area of the proposed development, sloping toward the coastal bluff delineation and the slope face to the beach below. The lot is approximately 23,333 SF in size with an existing perimeter fence.

In August 2020, the Planning Commission approved a Coastal Development Permit to construct a new two-story residence, and attached garage, and new pool. The property was recently sold and the current owners are seeking approval of a revised Coastal Development Permit.

#### Proposed Project

The proposed project includes the development of a new two-story 3,905 SF single-family residence with an attached two-car 488 SF garage, and a detached single-story 509 SF accessory dwelling unit (ADU). The project includes roof mounted solar panels, a new driveway and driveway apron, patios and walkways, landscaping and a new 42" tall fence 10-feet from the bluff edge. There is an existing oak tree located on the west side of the property that will remain and be protected (refer to Arborist report prepared by Bill Spiewak, dated July 27, 2023). Also, an existing street tree is proposed for removal in the area of the proposed driveway and has been approved by the City's Park and Recreation Commission. In this instance, the City's Floor to Lot Area Ratio (FAR)

development standard is a guideline as the property lot area exceeds 15,000 SF; the proposed residence and garage will result in 93% of the maximum FAR guideline.

The project proposes the single-story ADU and garage at the front of the site, buffered and enhanced with landscaping between the structures and the sidewalk, with the second story elements and massing located deeper into the site in a manner to provide relief from the street frontage and to achieve compatibility of size, scale and mass with the surrounding development. The proposed architecture is traditional Mediterranean style, with gables and hipped roofs with an exterior stucco finish and Mission tile roofs. The East Mesa neighborhood is comprised of a range of architectural styles, including examples of this traditional architecture.

A Preliminary Landscape Plan has been developed compliant with the City of Santa Barbara's landscape design standards for water conservation and incorporates a plant palette to compliment the architectural style of the residence as well as appropriate native plant selections that are appropriate for the coastal bluff area and compliant with Coastal LUP policies 5.1-33 and 38.

#### Storm Water Treatment/Drainage

The project requires a Tier 3 Storm Water Treatment plan to meet the City's requirements for water quality treatment, peak runoff discharge rate and volume reduction. Refer to Sheet C1, the preliminary grading and drainage plan with which includes a summary of impermeable and permeable area totals.

A Stormwater/Hydrology Report conducted by Flowers & Associates (updated December 14, 2023) illustrates a stormwater control plan designed to capture runoff from the proposed structures and other impermeable surfaces (i.e. roofs, patios, decks, etc.). Runoff generated onsite will be conveyed by a combination of proposed surface gradients and storm drains to six (6) cisterns for storage and reuse on the project site.

#### Geologic Evaluation and Slope Stability Analysis

A Preliminary Geologic Investigation, prepared by Adam Simmons, May 7, 2020, was prepared in conjunction with the previously approved project. The investigation evaluated the general geologic conditions associated with the previously proposed development including coastal development policies for bluff top development per the City's draft Coastal Land Use Plan. The investigation also considered the Slope Stability Analysis, May 22, 2019, (updated, November 5, 2019) prepared by Braun and Associates. The investigation concludes that it is feasible to construct the proposed structures adhering to the identified 75-year structural setback located approximately 76 feet landward of the CA Coastal Commission certified top of bluff. The investigation includes recommendations that will be incorporated into the proposed revised project in order to reduce the potential for adverse geologic conditions that may affect the subject property.

### Single-Family Design Board Review

A Concept Review hearing was held before the Single-Family Design Board on October 9, 2023 May 8, 2023 to gain feedback associated with the general architectural style, project mass, bulk, and scale and neighborhood compatibility. The SFDB commented favorably, commented that the project will enhance the neighborhood, and forwarded the project to the Planning Commission.

### Required Discretionary Applications

- A Coastal Development Permit for site improvements for a property located in the Appealable jurisdiction of the Coastal Zone, and
- Review and approval by the Single-Family Design Review Board

### Conclusion

The proposed project has been designed to achieve consistency with the City's Guidelines for Single Family Residential development in the Hillside Design District and the Coastal Land Use Plan including applicable policies associated with bluff top development for residential uses as evidenced by the Preliminary Geologic Investigation and Slope Stability analysis described above. The project will not negatively impact the health and welfare of the surrounding neighborhood and community. It does not impact public or private viewsheds and the project is compatible with the surrounding neighborhood. It is consistent with applicable General Plan and Local Coastal Plan Policies regarding coastal development and bluff protection.

On behalf of the applicant and project team, we thank the Commission for their consideration of this request. I can be reached at (805) 966-2758 x116 should you or your staff have any questions that you would like to discuss.

Sincerely,  
**SUZANNE ELLEDGE**  
**PLANNING & PERMITTING SERVICES**



Trish Allen, AICP  
Senior Planner



# City of Santa Barbara

## SINGLE FAMILY DESIGN BOARD

### MINUTES

### OCTOBER 9, 2023

3:00 P.M.  
David Gebhard Public Meeting Room  
630 Garden Street  
[SantaBarbaraCA.gov](http://SantaBarbaraCA.gov)

#### BOARD MEMBERS:

Leslie Colasse, *Chair*  
Lauralee Anderson, *Vice Chair*  
Katie Gerpheide  
Jennifer Lewis  
Dawn Sherry

#### CITY COUNCIL LIAISON:

Meagan Harmon

#### PLANNING COMMISSION LIAISON:

Sheila Lodge

#### STAFF:

Ellen Kokinda, Design Review Supervisor  
Holly Garcin, Assistant Planner  
Joanie Saffell, Commission Secretary

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### CALL TO ORDER

The Full Board meeting was called to order at 3:02 p.m. by Chair Colasse.

### ATTENDANCE

Members present:	Colasse, Anderson, and Gerpheide
Members absent:	Lewis and Sherry
Staff present:	Garcin and Mary Ternovskaya, Senior Commission Secretary

### GENERAL BUSINESS

#### A. Public Comment:

Written correspondence from Christy Schuerch & Jeff Sutton was acknowledged.

#### B. Approval of Minutes:

Motion: Approve the minutes of the Single Family Design Board meeting of **September 25, 2023**, as submitted.  
Action: Colasse/Gerpheide, 3/0/0. (Lewis and Sherry absent.) Motion carried.

#### C. Approval of the Consent Calendar:

Motion: Ratify the Consent Calendar of **October 2, 2023**, as reviewed by Board Member Anderson, as amended.  
Action: Anderson/Colasse, 3/0/0. (Lewis and Sherry absent.) Motion carried.

The ratification of the Consent Calendar of **October 9, 2023**, as reviewed by Board Member Sherry was postponed to the following hearing.

- D. Announcements, requests by applicants for continuances and withdrawals, future agenda items, and appeals:
1. Mr. Hamilton-Rolle announced the following:
    - a. On Thursday, October 26, 2023, from 2:30 to 4:00 pm the Land Development Team Oversight Committee (LDTTO) will have a meeting. The Single Family Design Board (SFDB) members are encouraged to attend the meeting or view via City TV. If there is a quorum of three members the meeting will have to be agendaized as an SFDB hearing.
    - b. Revisions to the Average Unit Size Density incentive program Ordinance, (AUD) will take up the bulk of the meeting. The general update will be on the direction of the project and the project timeline. There will be no specific code regulations currently for the oversight committee, but an opportunity for the public to comment.
  2. Ms. Garcin announced the following:
    - a. 1830 Overlook Lane was appealed to the Planning Commission. The Planning Commission approved the applicant's appeal. They approved the use of the Bravo lightweight tile with conditions that will be confirmed through the building permit process.
    - b. The SFDB Consent and Full Board hearings are cancelled for Monday, November 20, 2023, due to the Thanksgiving Holiday. Pending future Fall/Winter Agendas special hearings may be added.
  3. Board Member Colasse announced she will be absent from the November 6, 2023 meeting.

### **(3:15PM) NEW ITEM: CONCEPT REVIEW**

1. **1553 SHORELINE DRIVE**  
Assessor's Parcel Number: 045-173-043  
Zone: E-3/SD-3  
Application Number: PLN2023-00353  
Owners: Suzanne and Peter Hooper  
Architect: Thomas Ochsner, AIA  
Applicant: Trish Allen, SEPPS Inc.

(Proposal to construct a 3,905-square-foot two-story single-unit residence with a 488-square-foot attached two-car garage and a 509-square-foot detached standard single-story Accessory Dwelling Unit (ADU) on a vacant bluff-top parcel located in the Coastal Zone Appeals Jurisdiction. Project also includes new landscape, hardscape, and fencing. The standard ADU is not within the purview of the SFDB. The proposed total of 4,902 square feet of development on a 23,333-square-foot lot is 104% of the maximum guideline floor-to-lot-area ratio (FAR).) A Coastal Development Permit is also required.

**No appealable action will take place at this hearing. Neighborhood Preservation Findings and Hillside Design District & Sloped Lot Findings would be required for Project Design Approval. The project was previously reviewed on May 8, 2023, on a Pre-Application (PRE2023-00050).**

Actual time: 3:13 p.m.

Present: Trish Allen, Applicant, SEPPS Inc.; Courtney Miller, Landscape Architect, CJMLA; Liz Hughes, Architect; Tom Ochnser, Architect; and Barbara Burkhardt, Assistant Planner, City of Santa Barbara

Staff comments: Ms. Burkhardt stated that this is a concept review as a part of a formal application. The project has not been to Planning Commission. The Board shall comment on site planning, general architectural style, and the project's relationship to its site and neighborhood. Staff is looking for direction on whether the project will go to the Planning Commission or come back to SFDB Full Board.

Public comment opened at 3:27 p.m.

The following individuals spoke:

1. Marc Chytilo

Public comment closed at 3:28 p.m.

**Motion: Continue indefinitely to the Planning Commission, with a return to the Full Board, with the following comments:**

1. The Board has positive comments and feels the project can proceed to the Planning Commission.
2. The Board supports the proposed floor-to-lot area ratio (FAR) due to the study shown. Specifically, the property located to the left of the subject property is at 118% FAR and the property located immediately across the street from the subject property on Shoreline Drive is at 104% FAR.
3. In general, the Site plan is a great design, inviting with the autocourt, and is welcoming with landscaping proposed in the front, unique to Shoreline Drive, and does not propose a gate.
4. The Board appreciates the garage doors at an angle and not right on the street.
5. The architectural style is beautiful and articulated well.
6. High quality architectural materials, finishes, and colors are palatable and aesthetically pleasing.
7. In general, the project will enhance the neighborhood.
8. The applicant shall study the second floor window visible on the west side of the north elevation as it relates to the amount of plaster return on either side.
9. The westerly neighbor shall be consulted and privacy from the second floor primary bedroom deck should be addressed to greatest degree possible.
10. The applicant shall provide windows or an acoustical method of addressing potential noise coming from the covered loggia that could cause disruption for the easterly neighbor.

Action: Anderson/Colasse, 3/0/0. (Lewis and Sherry absent.) Motion carried.



**(3:55PM) CONTINUED ITEM: FINAL APPROVAL****2. 3208 LAUREL CANYON ROAD**

Assessor's Parcel Number: 055-180-002  
Zone: RS-7.5  
Application Number: PLN2022-00269  
Owners: Goodman Family Trust 3/19/1997  
Jerry H. Goodman and Anne F. Goodman, Trustees  
Applicant/Designer: Joe Steuer, Studio 4 Design Group

(The parcel is developed with a one-story, 1,288-square-foot single-unit residence, and a 241-square-foot attached one-car garage. The project proposes a 192-square-foot first-floor addition and a 758-square-foot second-story addition. The project also includes an interior remodel; a new 200-square-foot carport; a 345-square-foot first-floor covered patio; two second-story decks totaling 106 square feet; removal of the existing concrete driveway and replacement with permeable paver system; new landscape; and associated mechanical, electrical, and plumbing upgrades. A 241-square-foot attached garage will remain. Review and approval of a Minor Zoning Exception (MZE) is requested to allow over height existing and proposed hedges within the easterly interior setback. The proposed total of 2,679 square feet on a 6,892-square-foot lot is approximately 92 percent of the maximum required floor-to-lot area ratio (FAR).)

**Final Approval is requested. Project plans require substantial conformance to the plans that received Project Design Approval on February 27, 2023. The project was last reviewed February 27, 2023.**

Actual time: 3:54 p.m.

Present: Joe Steuer, Studio 4 Design Group; and John Goodman, Representing Ownership

Public comment opened at 4:10 p.m.

The following individuals spoke:

1. Anita Williamson
2. Marc Chytilo

Written correspondence from Marc Chytilo and Garrett Headley was acknowledged.

Public comment closed at 4:16 p.m.

**Motion: Final Approval with the following finding and conditions:**

1. The Board finds that the following Minor Zoning Exception criteria have been met for the existing hedge on easterly property line and proposed hedge that will continue the existing hedge as follows:
  - a) The granting of such exception will not be detrimental to the use and enjoyment of other properties in the neighborhood because the hedge is already existing.
  - b) The improvements are sited such that they minimize impact next to abutting properties. They were proposed to address privacy concerns from easterly parcel adjacent.
  - c) The project generally complies with applicable privacy, landscaping, noise, and lighting standards in the Single Family Design Board Good Neighbor Guidelines
  - d) The improvement will be compatible with the existing development and character of the neighborhood. The existing hedge is there already, it is just being continued.
  - e) The granting of such an exception will not create or exacerbate an obstruction of the necessary sightlines for the safe operation of motor vehicles.
2. Condition that the new hedge that is going to be placed adjacent to the easterly property line will be planted on the subject parcel.
3. Condition that the fence color for proposed horizontal fencing will be painted Dunn Edwards Crushed Stone number DE 6067.
4. Confirm if the proposed Olive trees meet high fire requirements, applicant will return for a Review-After-Final with substitute tree(s) if it does not.

Action: Colasse/Anderson, 3/0/0. (Lewis and Sherry absent.) Motion carried.

The ten-day appeal period was announced.

**(4:35PM) CONTINUED ITEM: FINAL APPROVAL****3. 1269 FERRELO ROAD**

Assessor's Parcel Number: 029-271-006  
Zone: RS-15  
Application Number: PLN2022-00036  
Owner: Jarryd Commerford  
Applicant/Architect: Dan Weber, AIA, Anacapa

(Proposal for substantial redevelopment of the existing non-conforming residence involving partial demolition for a new 3,699-square-foot three-story residence conforming to the required setbacks with a 442-square foot garage. Project includes permitting the as-built conversion of floor area at the basement level to habitable, and additional improvements including removal of the existing driveway and curb cut to be replaced with a new curb cut and access bridge at the new garage location, new photovoltaic array infrastructure, a pool, and hardscape and landscape improvements throughout. The proposed total of 3,421-square-feet on a 12,197 square foot lot is 85% of the maximum required floor-to-lot area ratio (FAR) (includes 50% floor area reduction for the partially below grade basement). The property is adjacent to a historic resource in the English Vernacular style at 1277 Ferrelo Road.)

**Final Approval is requested. Project plans require substantial conformance to the plans that received Project Design Approval on January 17, 2023. The project was last reviewed January 17, 2023.**

**Motion:** Item continued two weeks to the October 23, 2023 Full Board meeting, with the comment that the project shall be the first item on the agenda, and with confirmation of quorum taken the day before.

**Action:** Colasse/Anderson, 3/0/0. (Lewis and Sherry absent.) Motion carried.

**\* MEETING ADJOURNED AT 4:47 P.M. \***

# Applicable Coastal Act and Coastal Land Use Plan Policies – 1553 Shoreline Drive

## COASTAL ACT POLICIES

### **Section 30244 Archaeological or paleontological resources**

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

### **Coastal Act 30250 (Location; existing developed area)**

New residential, commercial, or industrial development, except provided in this division, shall be located within, contiguous with, or near, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have a significant adverse effect, either individually or cumulatively, on coastal resources...

### **Section 30251 Scenic and visual qualities**

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

### **Section 30253 Minimization of adverse impacts**

New development shall do all of the following:

- (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.
- (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.
- (d) Minimize energy consumption and vehicle miles traveled.
- (e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses.

## Section 30270 Sea Level Rise

The commission shall take into account the effects of sea level rise in coastal resources planning and management policies and activities in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise.

# LOCAL COASTAL PROGRAM COASTAL LAND USE PLAN POLICIES

## LAND USE & DEVELOPMENT POLICIES

**Policy 2.1-17** Land Use Categories and Map Designations. The land use categories and designations in Tables 2.1-1 through 2.1-5 establish the type, density, and intensity of land uses within the City's Coastal Zone. Figure 2.1-1 *Local Coastal Program Land Use Map* depicts the land use designation for each property and is intended to provide a graphic representation of policies relating to the location, type, density, and intensity of all land uses in the Coastal Zone. Allowable densities are stated as maximums but may be increased pursuant to an approved Coastal Development Permit that includes density bonus, inclusionary housing, or a lot area modification for affordable housing. However, compliance with the other policies of the Coastal LUP may limit the maximum allowable density of development. Accessory dwelling units are considered accessory uses and are not included as "units" when calculating allowable density.

## PUBLIC ACCESS POLICIES

**Policy 3.1-29** Off-Street Parking for New Development and Substantial Redevelopment.

- A. Parking standards in the Zoning Ordinance are designed to ensure sufficient off-street parking is provided for new development and substantial redevelopment so as to avoid significant adverse impacts to public access to the shoreline and coastal recreation areas. Off-street parking for new development and substantial redevelopment, therefore, shall be consistent with the Zoning Ordinance.
- B. Zoning modifications to allow reduced off-street parking in the West Beach, Lower State, and East Beach Component Areas shall only be approved if a project specific evaluation of parking demand shows that the reduced parking will provide for the anticipated parking demand generated by the development. In determining parking demand, the following may be considered: proximity to transit facilities; mix of uses in the immediate area; offsite parking agreements; and provisions of a transportation demand management plan where it is demonstrated that the plan's measures will sufficiently reduce the demand for parking.

# WATER QUALITY POLICIES

## *General*

**Policy 4.2-21** Biological Productivity and Water Quality. As outlined in Coastal Act Section 30231, the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

## *Storm Water Management*

**Policy 4.2-22** Storm Water Management. All development shall be planned, sited, and designed to protect the water quality and hydrology of coastal waters in accordance with the requirements of the City's Storm Water Management Program, approved by the Central Coast Regional Water Quality Control Board under California's statewide National Pollutant Discharge Elimination System (NPDES) Phase II Small Municipal Separate Storm Sewer System (MS4) Storm Water Permit (Order No. 2013-0001 DWQ, effective July 1, 2013, or any amendment to or re-issuance thereof).

## *Construction*

**Policy 4.2-23** Minimize Water Quality Impacts During Construction. Minimize water quality impacts during construction by:

- A. Minimizing the project footprint, including area required for road access and required fire protection for the proposed development;
- B. Minimizing land disturbance activities of construction (e.g., clearing, grading, and cut-and-fill), especially in erosive areas (including steep slopes, unstable areas, and erosive soils);
- C. Phasing grading activities;
- D. Preventing unnecessary soil compaction;
- E. Implementing an erosion and sediment control plan that includes BMPs to stabilize soil and prevent pollution through erosion prevention techniques and sediment control measures;
- F. Implementing BMPs to minimize the discharge of other pollutants resulting from construction activities (such as paints, solvents, vehicle fluids, asphalt and cement compounds, preservatives from treated wood, trash, and debris) into runoff or coastal waters; and
- G. Monitoring land disturbance activities to ensure conformance to approved plans.

**Policy 4.2-24** Revegetation. Areas disturbed by development activity shall, to the extent feasible, be revegetated prior to the rainy season (November 1-April 15).

# SCENIC RESOURCES & VISUAL QUALITY POLICIES

## *General*

- Policy 4.3-2**     Restore and Enhance Visually Degraded Areas. Development shall, where feasible, restore and enhance visual quality in visually degraded areas.
- Policy 4.3-3**     Design Review. Development in the Coastal Zone shall be reviewed by the Architectural Board of Review, Historic Landmarks Commission, or Single Family Design Board in accordance with established rules and procedures, as applicable. If any of the rules, procedures, or actions of these design review boards/commissions conflict with the policies of the Coastal LUP, the policies of the Coastal LUP shall take precedence.
- Policy 4.3-4**     Visual Evaluation Requirement. A site-specific visual evaluation shall be required for new development and substantial redevelopment that has the potential to impact scenic resources or public scenic views. The visual evaluation shall be used to evaluate the magnitude and significance of changes in appearance of scenic resources or public scenic views as a result of development. *Siting, Design, and Review*
- Policy 4.3-5**     Protection of Scenic Resources and Public Scenic Views. Development shall be sited and designed to avoid impacts to scenic resources and public scenic views. If there is no feasible alternative that can avoid impacts to scenic resources or public scenic views, then the alternative that would result in the least adverse impact to scenic resources and public scenic views that would not result in additional adverse impacts to other coastal resources shall be required. Methods to mitigate impacts could include, but not be limited to: siting development in the least visible portion of the site, managing building orientation, breaking up the mass of new structures, designing structures to blend into the natural setting, restricting the building maximum size, reducing maximum height standards, clustering building sites and development, requiring a view corridor, eliminating accessory structures not requisite to the primary use, minimizing grading, minimizing removal of native vegetation, incorporating landscape elements or screening, incorporating additional or increased setbacks, stepping the height of buildings so that the heights of building elements are lower closer to public viewing areas and increase with distance from the public viewing area. Mitigation shall not substitute for implementation of the feasible project alternative that would avoid impacts to visual resources, public scenic views, or public viewing areas.
- Policy 4.3-6**     Obstruction of Scenic View Corridors. Development shall not obstruct public scenic view corridors of scenic resources, including those of the ocean viewed from the shoreline and of the upper foothills and mountains viewed respectively from the beach and lower elevations of the City.
- Policy 4.3-7**     Compatible Development. Development shall be sited and designed to be visually compatible with the character of surrounding areas and where appropriate, protect the unique characteristics of areas that are popular visitor destination points for recreational uses.

**Policy 4.3-8** Mitigating Impacts to Visual Resources. Avoidance of impacts to visual resources through site selection and design alternatives, if feasible, is the preferred method over landscape screening. Landscape screening, as mitigation of visual impacts, shall not substitute for project alternatives including resiting, or reducing the height or bulk of structures. When landscaping is required to screen the development, it shall be maintained for the life of the development for that purpose.

*Grading, Landscaping, Walls and Fences*

**Policy 4.3-9** Minimize Excavation, Grading and Earthwork. Minimize alteration of natural landforms to ensure that development is subordinate to surrounding natural features such as drainage courses, prominent slopes and hillsides, and bluffs. Site and design new development and substantial redevelopment to minimize grading and the use of retaining walls, and, where appropriate, step buildings to conform to site topography.

**Policy 4.3-10** Landscape Cut and Fill Slopes. Cut and fill slopes and other areas disturbed by construction activities shall be landscaped or revegetated at the completion of grading.

**Policy 4.3-11** Landscape Plans Required. Applications for new development and substantial redevelopment shall be required to have an approved landscape plan prepared by a licensed design professional that demonstrates that the landscaping associated with the new development or substantial redevelopment is visually compatible with the character of the area and minimizes impacts to visual and scenic resources. As a condition of the permit, the applicant shall be required to implement and fulfill all obligations of the landscape plan for the life of the development. The following standards shall apply:

- Ensure vegetation choices are appropriate for environmental conditions, including but not limited to, exposure, soil, and water needs. Unless otherwise specified in Policies 4.1-17 or 5.1-38, within and near areas of natural vegetation and natural habitats, require drought-tolerant plant species, except where inappropriate for the given habitat type (e.g., creek beds and wetlands), that blend with the existing natural vegetation and natural habitats on the site. Within High Fire Hazard Areas, plant species should be fire retardant. The use of any plant species listed as problematic, a noxious weed, or invasive by the California Native Plant Society, the California Exotic Pest Plant Council, the State of California, or the federal government shall be avoided unless necessary for habitat restoration of a sensitive species (e.g., Monarch Butterfly).
- Landscaping shall be designed to avoid obstructing or limiting public view impacts for the life of the development. Plant materials shall be chosen to avoid impacts at their maximum growth potential. The property owner shall maintain new plant materials to avoid their inadvertently intruding into the protected viewshed.
- Landscaping and irrigation shall be planned with consideration for water conservation through use of water-wise plant species; water-efficient irrigation systems, including using microspray, drip irrigation, and mulching; and designing irrigation to eliminate runoff.
- Enforce City regulations that require maintenance of the trees, plants, irrigation systems, and other improvements shown on an approved landscape plan.

**Policy 4.3-13** Tree Protection and Replacement.



- A. Trees qualifying as ESHA shall be fully protected as required by the Biological Resources protection policies (Policy 4.1-1 et seq.).
- B. For non-ESHA trees:
  - i. Development shall be sited and designed to preserve and protect, to the extent feasible, mature trees (trees four inches in diameter or greater at four feet six inches above grade in height) and trees important to the visual quality of the property;
  - ii. Mature or visually important trees should be integrated into the project design rather than removed or impacted through encroachment into the root zones; and
  - iii. Where the removal of mature or visually important trees cannot be avoided through the implementation of project alternatives or where development encroachments into the root zone result in the loss or worsened health of the trees, the removed tree(s) shall be replaced on a minimum 1:1 basis. This standard can also be increased up to 10:1 depending on the type of tree removed, lot size, and size and expected survival rate of replacement trees.

**Policy 4.3-14** Minimize Removal of Native Vegetation.

- A. Native vegetation that meets the definition of ESHA, creek, or wetland, shall be fully protected as required by the Biological Resource policies (Policy 4.1-1 et seq.).
- B. Development shall minimize removal of non-ESHA native vegetation.

**Policy 4.3-16** Accessory Walls and Fencing. Where accessory walls or fencing have the potential to impact scenic resources or public scenic views, such development shall be avoided to the maximum extent feasible. Where unavoidable, accessory walls and fencing shall be sited and designed to protect scenic views and visual resources by implementing mitigation measures that minimize visibility, including a reduction in the maximum allowed height or a visually permeable design that preserves public scenic views.

*Shoreline Development*

**Policy 4.3-18** Coastal Bluff Top Development. Coastal bluff top development shall be designed and sited to protect and minimize alteration of natural landforms and preserve the natural and scenic quality of shoreline bluffs, particularly as viewed from the beach below. Compliance with this policy may require an additional buffer beyond that required to protect ESHA or avoid coastal hazards.

*Lighting*

**Policy 4.3-20** Open Space Night Sky Preservation. Strive to restore views of the night sky, while meeting traffic safety lighting, navigational lights, and other similar safety lighting needs. Exterior lighting (except traffic lights, navigational lights, and other similar safety lighting) shall minimize all forms of light pollution, including light trespass, glare, and sky glow.

Where development is adjacent to beaches and open space areas, exterior lighting shall be consistent with the following:

- A. Restricted to low-intensity features that use the best available visor technology and shielding to minimize light spill and direct/focalize lighting downward, toward the targeted area(s) only; and
- B. Use best available technology and a lighting spectrum designed to minimize lighting impacts on wildlife and habitat as well as minimize glare and sky glow.

#### *Utility Service Connections*

**Policy 4.3-25** Underground Utility Service Connections. All new development and substantial redevelopment in the Coastal Zone shall underground on-site service connection for utilities (the utility service equipment serving an individual parcel) consistent with the resource protection policies and provisions of the LCP unless it results in an unreasonable hardship or undergrounding is infeasible.

#### *Definitions & Procedures*

**Policy 4.3-27** Public Scenic Views and Scenic Resources Identification. Public scenic views are defined as views of scenic resources as viewed from public areas, such as Cabrillo Boulevard, Shoreline Drive, Cliff Drive, Meigs Road, Coast Village Road, Highway 101, public bluff top vista points, trails, beaches, and parklands. Public scenic views may be framed (view corridor), wide angle, or panoramic. Scenic resources are generally shown on Figure 4.3-1 *Scenic Resources* and include, but are not limited to, the following:

Areas inside the Coastal Zone of the City:

- A. Pacific Ocean;
- B. Coastal Bluffs & Shoreline;
- C. Creeks, Estuaries, Lagoons, and Riparian Areas;
- D. Stearns Wharf;
- E. Harbor;
- F. Douglas Family Preserve;
- G. Montecito Country Club;
- H. Andrée Clark Bird Refuge;
- I. Bellosguardo (formerly known as the Clark Estate);
- J. Santa Barbara Zoo;
- K. Parks;
- L. Historic Structures, Sites, and Trees important for their visual quality; and
- M. Landscaping and structures that are contributing resources to Scenic Highways and Routes (Potential State Scenic Highway—Highway 101 and Potential City Scenic Routes—Cabrillo Boulevard and Shoreline Drive).

Areas outside the Coastal Zone of the City:

- A. Pacific Ocean;
- B. Channel Islands;
- C. Foothills-Riviera; and
- D. Santa Ynez Mountains.

Figure 4.3-1 *Scenic Resources* is intended to be a general planning tool. Any scenic resource not designated on Figure 4.3-1 *Scenic Resources* that meets the definition of a scenic resource as specified above shall also be subject to the scenic and visual policies herein.

**Policy 4.3-28** View Corridor. A narrow view framed on both sides by existing development (including landscaping), large enough to provide a sense of contrast between the urban area in the foreground and important visual resources in the background.

**Policy 4.3-29** Visual Evaluation Requirement. Site-specific visual evaluations shall include an analysis of all feasible siting or design alternatives that would minimize significant impacts to public scenic views of scenic resources. The alternatives analysis shall identify through such means as visual simulations, three-dimensional massing models, perspective drawings, rendered streetscape elevations, and/or story poles and flagging. If there is no feasible alternative to avoid impacts to public scenic views of scenic resources, then the alternative that would result in the least adverse impacts to public scenic views of scenic resources that would not result in additional adverse impacts to other coastal resources shall be required.

## COASTAL HAZARDS POLICIES

### *General*

**Policy 5.1-18** Hazard Risk Reduction. New development and substantial redevelopment shall do all of the following, over the expected life of the development, factoring in the effects of sea level rise:

- A. Minimize risks to life and property from high geologic, flood, and fire hazards;
- B. Assure stability and structural integrity; and
- C. Neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area.

**Policy 5.1-19** Adaptation in Development. New development and substantial redevelopment shall consider the expected life of proposed development in conjunction with the best available information on climate change effects, particularly sea level rise, and incorporate adaptation measures, as needed, in the location, siting, and design of structures in order to minimize hazards and protect coastal resources for the life of the development.

### *Geologic & Seismic Hazards*

**Policy 5.1-20** Avoid or Minimize the Effects of High Geologic Hazards. New development and substantial redevelopment in areas of potential fault rupture, groundshaking, liquefaction, tsunami, seiche, slope failure, landslide, soil erosion, expansive soils, radon, or high groundwater shall be sited, designed, constructed, and operated (including

adherence to recommendations contained in any site specific geologic evaluation required) to ensure that the development minimizes risks to life and property, assures stability and structural integrity, and neither creates nor contributes significantly to erosion, geologic instability, or destruction of the site or surrounding area over its expected life, factoring in the effects of sea level rise.

**Policy 5.1-21** Avoid Development on Slopes Greater than 30%. Avoid, and where avoidance is not feasible, minimize development that involves grading on any slopes greater than 30%.

**Policy 5.1-22** Slope Failure Areas. New development and substantial redevelopment shall avoid areas subject to slope failure, to the extent feasible. Where avoidance is not feasible, minimize development and incorporate design and construction techniques that lessen slope failure risk, including use of deep-rooted, drought-tolerant vegetation, control of site drainage, and erosion control measures. Development proposed in slope failure areas within the Shoreline Hazards Screening Areas outlined in Policy 5.1-29 *Interim Shoreline Hazards Screening Areas Map* are subject to additional restrictions, as outlined in the shoreline hazard policies of this Chapter.

**Policy 5.1-23** Slope Stabilization and Protection.

- A. Where such measures are otherwise allowed pursuant to the policies of this Coastal LUP, slope stabilization devices and other geotechnical mitigation measures that significantly modify landforms shall only be permitted when all of the following criteria are met:
  - i. When necessary to minimize the risk of a geologic or shoreline hazard and when alternative techniques to protect the development from risk of damage due to landslides and unstable slope have been determined to be infeasible or more damaging to coastal resources. Alternate techniques to protect development could include: siting of development; use of deep-rooted; drought tolerant vegetation; control of site drainage; erosion control measures; and relocation or demolition of threatened existing development when appropriate;
  - ii. Any new structures that are threatened by high geologic hazards (landslides, etc.) are setback from the hazard, to the maximum extent feasible;
  - iii. The development is designed and constructed to assure stability and structural integrity, including meeting an adequate factor of safety (1.5 static conditions; 1.1 pseudostatic conditions) for the expected life of the structure, factoring in the effects of sea level rise; and
  - iv. The development will not create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area for the expected life of the development, factoring in the effects of sea level rise.
- B. Slope stabilization devices and other geotechnical mitigation measures that significantly modify landforms shall be designed to be the least environmentally damaging alternative, minimize landform alteration, avoid impacts to public access to and along the shoreline and coastal recreation areas, and be visually compatible with the surrounding natural environment, to the maximum extent

feasible. Mitigation measures shall be incorporated into the design and construction of slope stabilization projects to minimize adverse impacts to coastal resources consistent with the policies of this Coastal LUP.

- C. Temporary slope stabilization methods such as placement of tarps shall only occur in cases of immediate threat or emergency and shall not be maintained as permanent stabilization measures.

**Policy 5.1-28** Minimize the Effects of High Flood Hazard. New development and substantial redevelopment shall meet the following requirements over the expected life of the development, factoring in the effects of sea level rise:

- A. Avoid high flood hazards where feasible;
- B. Where avoidance of high flood hazards cannot be feasibly achieved, minimize flood risk by increasing elevation of structures, restricting basements or habitable floor area below grade, restricting grading, restricting fencing or yard enclosures that cause water to pond, and/or utilizing flood proof materials consistent with local building requirements; and
- C. Neither create nor contribute significantly to downstream flooding, erosion, geologic instability, or destruction of the site or surrounding area.

#### *Shoreline Hazards*

**Policy 5.1-29** Interim Shoreline Hazards Screening Areas Map.

- A. Figure 5.1-1 *Interim Shoreline Hazards Screening Areas* depicts hazard screening areas potentially subject to shoreline hazards including: beach erosion; coastal bluff erosion; coastal bluff slope failure or instability; coastal flooding; and wave impacts, now and in the future, factoring in the effects of sea level rise. The Map is based on data from geological investigations, surveys, aerial photos, best available science modeling of sea level rise, and other sources. The Map depicts areas potentially impacted from shoreline hazards resulting from 150cm of sea level rise with a 100-year storm event. The Map provides a screening-level tool that depicts where site specific technical evaluations may be required and where development standards pertaining to shoreline hazard areas may be applied. Any development subject to beach erosion, coastal bluff erosion, coastal bluff slope failure, coastal flooding, and/or wave impacts factoring in the effects of sea level rise, that are not located within the screening areas depicted on the Map, shall also be subject to the shoreline hazard policies of this Coastal LUP.
- B. Figure 5.1-1 *Interim Shoreline Hazards Screening Areas* shall be used in the interim period between CCC certification of this Coastal LUP and when new shoreline hazard screening procedures and maps are certified as part of the Sea Level Rise Adaptation Plan process.
- C. There are six potential shoreline hazards screening areas depicted on Figure 5.1-1 *Interim Shoreline Hazards Screening Areas* as follows:
  - i. Potential Shoreline Hazards Screening Area 1 (City-Owned Low-Lying Beach and Backshore Areas). This Area includes Arroyo Burro Beach; the portion of Arroyo Burro Beach Park subject to potential beach erosion;

and the area bounded by the southerly prolongation of La Marina Drive to the west, Cabrillo Boulevard and Shoreline Drive to the north, the westerly edge of the Bellosguardo property to the east, and the ocean to the south, excluding Stearns Wharf and the developed portions of the Harbor. This Area is subject to the following potential shoreline hazards: beach erosion, coastal flooding, and wave impacts;

- ii. Potential Shoreline Hazards Screening Area 2 (Bluff-Backed Beaches). This Area includes bluff-backed beaches from the mean high water line to the toe of coastal bluffs. This Area is subject to the following potential shoreline hazards: beach erosion, coastal bluff erosion, coastal bluff slope failure, coastal flooding, and wave impacts;
- iii. Potential Shoreline Hazards Screening Area 3 (Coastal Bluff Faces). This Area includes coastal bluff faces from the toe of coastal bluffs up to the coastal bluff edge. This Area is subject to the following potential shoreline hazards: coastal bluff erosion, coastal bluff slope failure, coastal flooding, and wave impacts;
- iv. Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops). This Area includes those portions of the bluff top landward of the coastal bluff edge. This Area is subject to the following potential shoreline hazards: coastal bluff erosion, landslide, and coastal bluff slope failure;
- v. Potential Shoreline Hazards Screening Area 5 (Stearns Wharf and Harbor). This Area includes the developed portions of Stearns Wharf and the Harbor. This Area is subject to the following potential shoreline hazards: beach erosion, coastal flooding, and wave impacts; and
- vi. Potential Shoreline Hazards Screening Area 6 (Inland Coastal Flooding Area). This Area includes low-lying areas potentially subject to coastal flooding that are not included in Potential Shoreline Hazards Screening Areas 1-5. This Area is subject to the following potential shoreline hazard: coastal flooding.

**Policy 5.1-32**    Development Standards for Potential Shoreline Hazards Screening Area 3 (Coastal Bluff Faces) on the Interim Shoreline Hazards Screening Areas Map.

- A. New development and substantial redevelopment on coastal bluff faces (area between the toe of the coastal bluff up to coastal bluff edge) shall be limited to:
  - i. Public trails, walkways, engineered staircases, or related public infrastructure to provide public access to the beach and coast;
  - ii. Habitat creation, restoration, and enhancement;
  - iii. Remediation or removal of hazardous materials;
  - iv. Re-establishment of natural landforms that have been altered by previous development activities;
  - v. Replacement of existing subsurface public utility pipes or lines where no inland siting alternative is feasible;

- vi. Drainage systems consistent with Policy 5.1-39 *Drainage Systems On Coastal Bluff Faces and Coastal Bluff Edge Development Buffers*;
  - vii. Slope stabilization devices and other geotechnical mitigation measures consistent with Policy 5.1-23 *Slope Stabilization and Protection* that are necessary to protect: development that provides coastal public access; existing public structures; drainage systems consistent with Policy 5.1-39 *Drainage Systems On Coastal Bluff Faces and Coastal Bluff Edge Development Buffers*; replacement of existing subsurface public utility pipes or lines where no inland siting alternative is feasible; existing principal structures; other existing habitable structures; existing garages or required parking areas; and minimum required ingress and egress to these existing structures; and
  - viii. Shoreline protection devices that are consistent with Policy 5.1-44 *Shoreline Protection Device Permitting*.
- B. If compliance with subsection A. above would prohibit a reasonable use of a lawfully created lot, Policy 5.1-36 *Reduction of Coastal Bluff Face and Coastal Bluff Edge Development Buffer Standards* or Policy 5.1-37 *Sea Ledge Lane* may apply.
- C. New development and substantial redevelopment shall be sited outside areas subject to beach erosion, coastal flooding, wave impacts, coastal bluff erosion, and coastal bluff slope failure over the expected life of the development, to the maximum extent feasible, factoring in the effects of sea level rise. If complete avoidance of hazard areas is not feasible, new development and substantial redevelopment shall be sited and designed to minimize impacts of beach erosion, coastal bluff erosion, coastal bluff slope failure, coastal flooding, and wave impacts to life and property; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area over the expected life of the development, factoring in the effects of sea level rise.

**Policy 5.1-33** Development Standards for Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops) on the Interim Shoreline Hazards Screening Areas Map.

- A. New development and substantial redevelopment shall be designed and sited to minimize impacts of coastal bluff erosion and coastal bluff slope failure to life and property; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas over the expected life of the development, factoring in the effects of sea level rise.
- B. Except for allowed development outlined in subsection C. below, new development and substantial redevelopment shall be sited landward of a Coastal Bluff Edge Development Buffer. The Coastal Bluff Edge Development Buffer shall be of sufficient size to ensure that new development and substantial redevelopment will not be threatened by erosion or slope instability, will not require the use of existing or new slope stabilization devices, and will not require the use of existing or new shoreline protective devices over the expected life of

the development, factoring in the effects of sea level rise. Policy 5.1-70 *Coastal Bluff Edge Development Buffer Calculation* provides a detailed methodology for site-specific analysis of Coastal Bluff Edge Development Buffers.

- C. New development and substantial redevelopment within Coastal Bluff Edge Development Buffers shall be limited to:
- i. Development allowed on coastal bluff faces pursuant to Policy 5.1-32 *Development Standards For Potential Shoreline Hazards Screening Area 3 (Coastal Bluff Faces) on the Interim Shoreline Hazards Screening Areas Map*;
  - ii. Landscaping and other plantings consistent with Policy 5.1-38 *Landscaping, Watering, Weight, and Drainage on Coastal Bluff Faces and Coastal Bluff Edge Development Buffers*;
  - iii. Substantial redevelopment, alteration, or relocation of existing public structures and public parking lots where no inland siting alternative is feasible and provided there is no net increase in overall development area. Relocation shall be to a site that has a smaller threat of erosion. Any needed shoreline protection shall be consistent with the policies of this Coastal LUP, including Policy 5.1-44 *Shoreline Protection Device Permitting*; and
  - iv. Patios (constructed of wood, pavers, stone, brick, tile, or similar material) no more than 10 inches above existing grade, walkways, lighting for public safety purposes, fences limited to 42 inches in height, and vegetation barriers, if they are minor improvements, easily removable (without the use of mechanized equipment), and conform to the following:
    - a. Shall be located at least 10 feet from the coastal bluff edge (fences or other vegetation barriers for safety purposes could be located as close as 5 feet from the bluff edge if there is no other feasible option on the site);
    - b. Shall require an evaluation by a qualified California licensed professional (e.g., Professional Geologist, Engineering Geologist, Geotechnical Engineer, or Civil Engineer, as applicable) that shows that the improvement will not create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area;
    - c. Shall be designed to be visually compatible with the surrounding area; and
    - d. Shall be subject to the conditions listed in Policy 5.1-42 *Conditions for Development in Shoreline Hazard Areas on the Interim Shoreline Hazards Screening Areas Map* and additional conditions of approval that:
      - i. Require proper maintenance of the improvements so that they do not become a safety issue or begin to affect



- erosion, geologic instability, or destruction of the site or surrounding area;
  - ii. Require that no mechanized construction equipment is used for installation or removal;
  - iii. Require removal of the minor improvements when erosion reaches less than 5 feet from the improvements or if the improvements are otherwise deemed unusable or unsafe due to imminent threat of damage or destruction from geologic instability, erosion, flooding, wave impact hazards, or other hazards associated with development on a coastal bluff or beach; and
  - iv. Limit the approval of the minor improvements to a maximum 20 years from the issuance of the Coastal Development Permit. When the permit term ends, the minor improvements shall be removed unless re-evaluation of the site shows the minor improvements still meet the standards and conditions listed above and a new Coastal Development Permit is approved to retain the minor improvements.
- D. If compliance with subsection A., B., and C. above would prohibit a reasonable use of a lawfully created lot, Policy 5.1-36 *Reduction of Coastal Bluff Face and Coastal Bluff Edge Development Buffer Standards* or Policy 5.1-37 *Sea Ledge Lane* may apply.

**Policy 5.1-38** Landscaping, Watering, Weight, and Drainage on Coastal Bluff Faces and Coastal Bluff Edge Development Buffers.

- A. Development, including landscaping and other improvements, shall be located and designed to prevent an increase in water percolation or excessive weight placed on coastal bluff faces and Coastal Bluff Edge Development Buffers, and to avoid increased drainage over the coastal bluff edge.
- B. All new plantings on coastal bluff faces and Coastal Bluff Edge Development Buffers shall be native, drought-tolerant vegetation. Sprinkler systems, irrigation plumbing, and in-ground irrigation systems shall not be allowed on coastal bluff faces and Coastal Bluff Edge Development Buffers. Watering shall not be allowed on coastal bluff faces or mapped slope failure areas, except for minimal manual watering needed for establishment of new plantings. Watering within Coastal Bluff Edge Development Buffers shall be limited to the minimum necessary for plant establishment and survival and accomplished via manual watering or easily removable drip irrigation tubing that is designed with a dedicated shutoff valve outside of the Coastal Bluff Edge Development Buffer. Additional limitations to watering in the Coastal Bluff Edge Development Buffer may be required based on the geologic conditions of the site.
- C. When new development or substantial redevelopment is proposed on coastal bluff faces or within Coastal Bluff Edge Development Buffers, existing landscaping and other plantings that are not drought-tolerant (e.g., lawns) shall be replaced

with native, drought-tolerant vegetation when appropriate based on the scope and nature of the development.

**Policy 5.1-39** Drainage Systems on Lots Containing Coastal Bluff Faces and Coastal Bluff Edge Development Buffers.

- A. Existing drainage systems on coastal bluff faces, including drainage pipes that hang partially or fully down the coastal bluff face and any drainage outlet on the coastal bluff face, shall be phased out and removed, to the maximum extent feasible, due to their continued impacts on bluff and beach erosion, visual resources, and biological resources.
- B. New development or substantial redevelopment on lots containing coastal bluff faces and Coastal Bluff Edge Development Buffers shall have drainage systems carrying runoff landward away from these areas and shall be conditioned to remove existing private bluff face drainage pipes, to the extent feasible. Where infeasible, new drainage systems on coastal bluff faces may only be permitted if each of the following criteria are met:
  - i. It is not feasible to carry runoff landward away from the bluff face;
  - ii. It is not feasible to utilize existing drainage systems, or use of existing drainage systems would result in more erosion or visual impacts than a new system; and
  - iii. The new drainage system is sited and designed to:
    - a. Be effective for the expected life of the development;
    - b. Avoid erosion and slope stability impacts;
    - c. Operate properly with only minimal maintenance requirements; and
    - d. Remain minimally visible for the expected life of the project. Drainage pipes on the bluff faces shall blend into the bluff (e.g., no blue-colored pipe).
- C. Where new or substantially redeveloped drainage systems are needed, consolidated drainage systems should be used where appropriate and feasible. Consolidated drainage systems should be sized to accommodate runoff from nearby and similarly drained parcels, if the consolidated system is found to be most beneficial and efficient, will not result in environmental damage, and property owners are in agreement regarding the installation and maintenance of a consolidated system.

**Policy 5.1-40** Private Bluff Accessways.

- A. As feasible, existing lawfully established private accessways on coastal bluff faces shall be phased out due to safety concerns and their cumulative impacts to coastal bluff erosion, slope stability, visual resources, beaches, and shoreline processes.
- B. No new private accessways (stairways, walkways, and trails), additions to existing lawfully established private accessways, or substantial redevelopment of existing lawfully established private accessways shall be allowed on coastal bluff faces.

- C. Unpermitted accessways on coastal bluff faces shall be removed and the coastal bluff face shall be restored.

**Policy 5.1-41** Material Disposal. The disposal of unauthorized material onto coastal bluff faces or beaches, including brush clippings from landscape vegetation, shall be prohibited. Property owners shall be required to remove any unauthorized materials on coastal bluff faces or beaches.

**Policy 5.1-42** Conditions for Development in Shoreline Hazard Areas on the Interim Shoreline Hazards Screening Areas Map. Coastal Development Permits for new development and substantial redevelopment located in Potential Shoreline Hazard Screening Areas on Figure 5.1-1 *Interim Shoreline Hazards Screening Areas*, or otherwise subject to reasonably foreseeable beach erosion, coastal bluff erosion, coastal bluff slope failure, coastal flooding, and/or wave impacts over the expected life of the development, factoring in the effects of sea level rise, shall include conditions that:

- A. Require removal of the development by owners if any government agency has ordered that the structure(s) is not to be occupied or is otherwise unsafe due to imminent threat of damage or destruction from any shoreline hazard;
- B. Require removal of all recoverable debris associated with the development in the event that portions of the development fall on the bluff face, to the beach, or are swept to another location before they are removed. All such debris shall be disposed of in a lawful manner. Such removal shall require authorization through an emergency and/or regular Coastal Development Permit;
- C. For uses and/or structures not allowed to have shoreline protection devices pursuant to Policy 5.1-44 *Shoreline Protection Device Permitting*, the following condition shall apply: Prohibit the construction of new or substantially redeveloped shoreline protection devices in the future to protect the new development or substantial redevelopment from any shoreline hazard;
- D. For uses not allowed to have slope stabilization devices pursuant to Policy 5.1-31 *Development Standards for Potential Shoreline Hazards Screening Area 3 (Coastal Bluff Faces)* and Policy 5.1-32 *Development Standards for Potential Shoreline Hazards Screening Area 4 (Coastal Bluff Tops)*, the following condition shall apply: Prohibit the construction of new or substantially redeveloped slope stabilization devices in the future to protect the new development or substantial redevelopment from any shoreline hazard;
- E. Limit the Coastal Development Permit to only the time period that the land underlying the development is under the ownership of the applicant or successor in interest. If the public trust boundary moves landward, resulting in the development encroaching onto public trust lands, the Coastal Development Permit will expire and the development on such public trust lands must be removed at the property owner's expense, unless the property owner obtains appropriate legal authorization from the trustee of the public trust lands (e.g., City of Santa Barbara or State Lands Commission) and obtains a new Coastal Development Permit from the CCC to authorize any development of public tidelands. Authorization for such development on public trust lands is restricted by the Coastal Act and Public Trust Doctrine and may not be allowed if the proposed use significantly interferes with public access or other public trust uses.

(This condition may not apply to applications for development in Potential Shoreline Hazards Screening Area 6 (Inland Coastal Flooding Area));

- F. Require the applicant to acknowledge that:
- i. The project site and public services to the site (utilities, roads, etc.) may be subject to beach erosion, bluff erosion, coastal bluff slope failure, coastal flooding, wave impacts, or other hazards associated with development on a coastal beach, coastal bluff face or top, or in a coastal flood and/or wave impact area, now and in the future, factoring in the effects of sea level rise;
  - ii. Public services to the site may not be maintained in perpetuity due to the impacts of sea level rise;
  - iii. The applicant assumes the risks of injury and damage from such hazards in connection with the permitted development; and
  - iv. The applicant waives any claim of damage or liability against the approving entity (the City, or, if the permit is appealed, the CCC) for injury or damage from such hazards.
- G. Require the applicant to record a deed restriction, in a manner acceptable to the City Attorney (or the Executive Director of the CCC if the permit is appealed), reflecting at a minimum the applicable Coastal Development Permit conditions listed above.

**Policy 5.1-43** Shoreline Hazards Avoidance Preferred. Protection of development at risk from shoreline hazards shall first avoid the hazards, including through demolition, relocation, siting of structures, as well as drainage control and installation of drought-tolerant landscaping. If avoidance is not feasible, other techniques that minimize hazards and avoid use of shoreline protection devices, such as use of vegetative planting, dune creation, dune restoration, and beach nourishment, shall be implemented in conjunction with avoidance techniques, as feasible.

**Policy 5.1-47** Legal Title. Applicants for proposed development on a beach or along the shoreline, including but not limited to a shoreline protection device, must demonstrate that they own adequate legal title to the underlying property. This includes, without limitation, that the applicants must demonstrate that the development either will not be constructed on public trust tidelands or that the applicants have received appropriate legal authorization from the City or State Lands Commission, whichever is trustee for those particular lands, to undertake the development consistent with public trust principles.

### *Definitions*

**Policy 5.1-53** Coastal Bluff Defined. A coastal bluff is a scarp or steep face of rock, weathered rock, sediment, and/or soil resulting from erosion, faulting, folding, or excavation of the land mass. The coastal bluff may be a simple planar or curved surface, or it may be step-like in section. For purposes of this Coastal LUP, "coastal bluff" is limited to those features having vertical relief of 10 feet or more and whose toe is or may be subject to marine erosion.

**Policy 5.1-54** Coastal Bluff Edge Defined. The coastal bluff edge is the upper termination of a bluff. In cases where the top edge of the bluff is rounded away from the face of the bluff as a

result of erosional processes related to the presence of the steep bluff face, the bluff edge is that point nearest the bluff, beyond which the downward gradient of the land surface increases more or less continuously, until it reaches the general gradient of the bluff. In a case where there is a step-like feature at the top of the bluff face, the landward edge of the topmost riser is the bluff edge. Where a coastal bluff curves landward to become a canyon bluff, the termini of the coastal bluff edge shall be defined as a point reached by bisecting the angle formed by a line coinciding with the general trend of the coastal bluff line along the seaward face of the bluff, and a line coinciding with the general trend of the bluff line along the canyon-facing portion of the bluff. Five hundred feet shall be the minimum length of bluff line or edge to be used in making a determination of where a coastal bluff becomes a canyon bluff.

- Policy 5.1-55** Coastal Bluff Erosion Defined. Coastal bluff erosion is the loosening and transportation of rock and soil along coastal bluffs by wind, water, waves, currents, or other natural forces.
- Policy 5.1-57** Expected Life of a Development Defined. The expected life of a development is the time period for which a development is expected to function without major repairs. The expected life of residential and commercial structures shall be a minimum of 75 years, while other types of development shall be determined on a case-by-case basis.
- Policy 5.1-58** Shoreline Protection Device Defined. Shoreline protection devices are constructed features such as seawalls, revetments, riprap, earthen berms, coastal bluff retaining walls, gunite covering, and bulkheads that block the landward erosion of the shoreline and are used to protect structures or upland areas from erosion, coastal flooding, and other impacts of waves and ocean currents. Also known as “coastal armoring.” Beach nourishment and dredged sediment management are not considered shoreline protection devices.
- Policy 5.1-59** Shoreline Hazards Defined. Hazards along the shoreline to the ocean that are created by winds, waves, currents, tides, storms, water, and geologic instability. Shoreline hazards include beach erosion, coastal bluff erosion, coastal bluff slope failure, landslide, coastal flooding, and wave impacts.
- Policy 5.1-60** Slope Stabilization Device Defined. Slope stabilization devices are constructed features such as retaining walls, sheet pile walls, buttresses, rip-rap, soldier piles, rock bolts, and gunite covering that are used to stabilize slopes. Slope stabilization devices influenced by or designed to prevent impacts from waves and ocean currents are considered Shoreline Protection Devices as outlined in Policy 5.1-58 *Shoreline Protection Device Defined.*
- Policy 5.1-61** Wave Impacts Defined. Wave impacts are damage and flooding caused by the velocity and volume of ocean waves and wave run-up (the vertical extent of wave uprush on a beach or low lying inland area) during normal and storm conditions. For the purposes of implementing the policies of this Coastal LUP, wave impacts (impacts from the force or velocity of fast moving, breaking waves) are distinguished from coastal flooding impacts (impacts from the presence of water in an area from tides, storm surge, or sea level rise).

#### *Procedures*

- Policy 5.1-62** Geologic Hazards Evaluations.
- A. Geologic Hazard Evaluations may be needed for new development and substantial redevelopment located in an area potentially subject to high geologic or seismic hazards (including fault rupture, ground shaking, liquefaction, slope

failure, expansive soils, soil erosion, radon, and high groundwater). See *Policies 5.1-64 through 5.1-68* for evaluations needed in Potential Shoreline Hazards Screening Areas. A City Environmental Analyst shall determine if and when a hazard evaluation is required, the scope of analysis, and the adequacy of any submitted reports prior to consideration of any Coastal Development Permit. Factors to be considered in determining whether a geologic hazard evaluation is required include, but are not limited to:

- i. Location of the project in relation to geologic hazard areas identified on the City's Master Environmental Assessment hazard information maps, certified maps, or on any other maps prepared by other resource agencies that depict areas of known safety hazards;
- ii. Site-specific hazards information;
- iii. The adequacy of other existing hazards evaluations for the site or area;
- iv. Potential for the project to exacerbate natural or human-caused hazards;
- v. Potential for the project to be impacted by natural or human-caused hazards;
- vi. Intended use of the site or proposed structures; and
- vii. Current federal, state, and local hazards regulations, including local building code requirements.

B. Site-specific hazard evaluations shall be prepared by a qualified California licensed professional (e.g., Professional Geologist, Engineering Geologist, Geotechnical Engineer, Civil Engineer, Soils Engineer, and/or Coastal Engineer, as applicable). A City Environmental Analyst shall determine the adequacy of any submitted evaluations prior to consideration of Coastal Development Permits. Some evaluations may require peer review by a technical specialist in order to be deemed adequate. The City may impose a fee on applicants to recover the cost of peer review of evaluations.

C. Geologic Hazard Evaluations shall include:

- i. Site specific hazards information (e.g. detailed descriptions of the hazard or other technical information relating to the hazard);
- ii. Evaluation of the potential for geologic hazards to be present on the site based on hazards screening maps, site research, and field surveys, as appropriate;
- iii. Evaluation of any potential adverse impacts the project may have during construction or operation on the extent or severity of geologic hazards on the site or neighboring sites;
- iv. Identification of alternatives to avoid or minimize hazards and potential impacts of the project, consistent with the policies of this Coastal LUP;
- v. Statement verifying whether the development will minimize risks to life and property; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area over its expected life; and

- vi. In areas of potential slope failure, a screening level investigation to determine whether the site exhibits a high potential for slope failure and to determine if a detailed quantitative evaluation of slope failure is needed. When detailed quantitative evaluation of slope stability is required, the evaluation should demonstrate how all structures will meet a minimum factor of safety of 1.5 under static conditions and 1.1 under pseudo static conditions.

**Policy 5.1-63** Shoreline Hazard Evaluations.

- A. New development and substantial redevelopment in the Potential Shoreline Hazards Screening Areas 1-5 or areas otherwise subject to beach erosion, coastal bluff erosion, coastal bluff slope failure, and/or wave impacts shall require a Shoreline Hazard Evaluation. Shoreline Hazard Evaluations shall also be required for repairs and alterations of existing structures that require foundation work or substantial grading.
- B. The evaluation may be waived by the Environmental Analyst for:
  - i. Minor development that meets the following criteria:
    - a. Does not require a structural foundation;
    - b. Does not require slope stabilization, retaining walls, or other geotechnical mitigation measures;
    - c. Does not require significant grading or modified landforms; and
    - d. Designed to be easily removed.
  - ii. Development proposed in areas where previous hazard evaluations show no risk of the potential hazard (previous hazards evaluations completed for the development site must be no more than two years old).
- C. A City Environmental Analyst shall determine if and when a Shoreline Hazard Evaluation is required, the scope of analysis, and the adequacy of any submitted evaluations prior to consideration of a Coastal Development Permit. Some evaluations may require peer review by a technical specialist in order to be deemed adequate. The City may impose a fee on applicants to recover the cost of review of evaluations.
- D. The required content and procedures for shoreline hazard evaluations in each shoreline hazards screening area are specified in the policies below. All shoreline hazard evaluations shall use the current best available science on sea level rise projections to analyze hazard conditions on the site over the expected life of the proposed development. The evaluation should, at a minimum, examine storm (100-year storm) and non-storm conditions and sea level rise impacts under a high emissions scenario based on state guidance.

**Policy 5.1-66** Potential Shoreline Hazards Screening Area 3 (Coastal Bluff-Faces) Evaluations for New Development and Substantial Redevelopment. The Potential Shoreline Hazards Screening Area 3 (Coastal Bluff-Faces) is potentially subject to coastal bluff erosion, coastal flooding, coastal bluff slope failure, and wave impacts. Shoreline Hazard Evaluations for development in this screening area shall be prepared and signed by a qualified California

licensed professional (e.g., Professional Geologist, Engineering Geologist, Geotechnical Engineer, Civil Engineer, Soils Engineer, and/or Coastal Engineer, as applicable). The evaluations shall be subject to review and approval by the City's Environmental Analyst. The Environmental Analyst may require peer review of evaluations by a technical specialist in order to deem them adequate. The City may impose a fee on applicants to recover the cost of review of evaluations. Evaluations shall analyze the effects of the hazard and the development over the expected life of the development, factoring in the effects of sea level rise, and with and without the effects of any existing or new shoreline protective devices or slope stabilization devices except for existing major public shoreline protection and flood protection devices (breakwater and other protection devices for the Harbor, Laguna Channel Tide Gate and Pump Station Facility, etc.). The following shall be evaluated:

- A. Detailed topographic information for the site, including representative cross sections;
- B. Mean high tide line, including a mean high tide line survey (unless data shows the mean high tide line will not be affected by the project);
- C. The toe of the coastal bluff and coastal bluff edge (see Policy 5.1-69 *Location of Coastal Bluff Edge* for more information);
- D. The area of the project site subject to coastal bluff erosion, coastal bluff slope failure, coastal flooding, and wave impacts;
- E. The FEMA Base Flood Elevation and other mapped areas;
- F. Future projections in sea level rise, associated beach erosion, coastal flooding, coastal bluff erosion, coastal bluff slope failure, and wave impacts, and any additional sea level rise related impacts that could be expected to occur over the life of the project in both storm (100-year storm) and non-storm scenarios. The analysis shall utilize best available science and include, at a minimum, evaluation of projected sea level rise at a high emission scenario based on state guidance;
- G. Design requirements to assure stability and structural integrity, including the need for any slope stabilization devices or other geotechnical mitigation measures over the life of the project. When detailed quantitative evaluation of slope stability is required after a screening-level investigation, a minimum factor of safety of 1.5 under static conditions and 1.1 under pseudo static condition shall be provided for structures;
- H. The need for a shoreline protection device over the life of the project;
- I. The long-term impacts of the proposed development on sand supply;
- J. The impacts of the proposed development during construction and operation on beach erosion, coastal bluff erosion, coastal bluff slope failure, coastal flooding, wave impacts, and any other hazards on or near the site;
- K. The impacts of the proposed development on public access to and along the shoreline;
- L. Any necessary mitigation measures, alternatives, or monitoring protocols to be completed over the life of the development and that are needed to avoid or



minimize any potential coastal bluff erosion, coastal bluff slope failure, coastal flooding, and wave impact hazards and any potential impact to public access to and along the shoreline;

- M. A statement verifying whether the development will minimize risks to life and property; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area during its expected life, factoring in the effects of sea level rise; and
- N. A site map that shows all easements, deed restrictions, or “Offers to Dedicate” and/or other dedications for public access or open space and provides documentation for said easements or dedications. The approved development shall be located outside of and consistent with the provisions of such easements or offers.

**Policy 5.1-67** Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops) Evaluations for New Development and Substantial Redevelopment. The Potential Shoreline Hazards Screening Area 4 (Coastal Bluff-Tops) is potentially subject to coastal bluff erosion and coastal bluff slope failure. Shoreline Hazards Evaluations for development in this screening area shall be prepared and signed by a qualified California licensed professional (e.g., Professional Geologist, Engineering Geologist, Geotechnical Engineer, Civil Engineer, Soils Engineer, and/or Coastal Engineer, as applicable). The evaluations shall be subject to review and approval by the City’s Environmental Analyst. The Environmental Analyst may require peer review of evaluations by a technical specialist in order to deem them adequate. The City may impose a fee on applicants to recover the cost of review of evaluations. Evaluations shall analyze the effects of the hazard and the development over the expected life of the project, factoring in the effects of sea level rise, and with and without the effects of any existing or new shoreline protective device or slope stabilization device, except for existing major public shoreline protection and flood protection devices (breakwater and other protection devices for the Harbor, Laguna Channel Tide Gate and Pump Station Facility, etc.). The following shall be evaluated:

- A. Detailed topographic information for the site, including representative cross sections;
- B. The coastal bluff edge (see Policy 5.1-69 *Location of Coastal Bluff Edge* for more information);
- C. The area of the project site subject to coastal bluff erosion or coastal bluff slope failure;
- D. The required Coastal Bluff Edge Development Buffer (see Policy 5.1-70 *Coastal Bluff Edge Development Buffer Calculation* for more information);
- E. Design requirements to assure stability and structural integrity, including the need for any slope stabilization devices or other geotechnical mitigation measures over the life of the project. When detailed quantitative evaluation of slope stability is required after a screening-level investigation, a minimum factor of safety of 1.5 under static conditions and 1.1 under pseudo static condition shall be provided for structures;
- F. The need for a shoreline protection device over the life of the project;

- G. The impacts of the proposed development during construction and operation on coastal bluff erosion, coastal bluff slope failure, and any other hazards on or near the site;
- H. Any necessary mitigation measures, alternatives, or monitoring protocols needed to avoid or minimize any potential coastal bluff erosion or coastal bluff slope failure hazards;
- I. A statement verifying whether the development will minimize risks to life and property; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area during its expected life, factoring in the effects of sea level rise; and
- J. A site map that shows all easements, deed restrictions, or “Offers to Dedicate” and/or other dedications for public access or open space and provides documentation for said easements or dedications. The approved development shall be located outside of and consistent with the provisions of such easements or offers.

**Policy 5.1-69** Location of Coastal Bluff Edge. The following outlines the process to determine the location of the coastal bluff edge to be used in the interpretation of the policies of this Coastal LUP.

- A. Figure 5.1-2 *Coastal Bluff Edge* shows the location of the coastal bluff edge in the City of Santa Barbara that meets the definition of coastal bluff edge contained in Policy 5.1-54 *Coastal Bluff Edge Defined*. This figure may be updated by the City based on best available information and current site conditions. Large scale and digital versions of Figure 5.1-2 *Coastal Bluff Edge* are available at the City of Santa Barbara Community Development Department office.
- B. The coastal bluff edge line depicted on Figure 5.1-2 *Coastal Bluff Edge* shall be used in the Coastal Development Permit process to establish a project’s consistency with the policies of this Coastal LUP, unless a site-specific analysis demonstrates substantial inaccuracies in the topography depicted on Figure 5.1-2 *Coastal Bluff Edge* that, when considered in combination with the definition of coastal bluff edge in Policy 5.1-54 *Coastal Bluff Edge Defined*, would result in a coastal bluff edge line for the property that is materially different than that depicted on Figure 5.1-2 *Coastal Bluff Edge*.
- C. If it is demonstrated that there are substantial inaccuracies in the topography depicted on Figure 5.1-2 *Coastal Bluff Edge*, when considered in combination with the definition of coastal bluff edge in Policy 5.1-54 *Coastal Bluff Edge Defined*, and the inaccuracies would result in a coastal bluff edge line for the property that is materially different than that depicted on Figure 5.1-2 *Coastal Bluff Edge*, then an alternate coastal bluff edge line shall be used to determine the consistency of the project with the policies of this Coastal LUP. The alternate coastal bluff edge shall meet the definition of coastal bluff edge contained in Policy 5.1-54 *Coastal Bluff Edge Defined* and be based upon best available topographic survey data.
- D. If an alternate coastal bluff edge is identified, pursuant to subsection C., and is more than 20 horizontal feet seaward of the coastal bluff edge line depicted on

Figure 5.1-2 *Coastal Bluff Edge*, an LCP Amendment amending Figure 5.1-2 *Coastal Bluff Edge* to correct the bluff edge in the subject area, shall be required concurrent with or prior to approval of a Coastal Development Permit that relies on the alternate bluff edge line, to find consistency with the policies of this Coastal LUP.

- E. Any Coastal Development Permit application requiring determinations outlined above as to inaccuracies of Figure 5.1-2 *Coastal Bluff Edge* and alternate coastal bluff edge locations shall include a detailed site-specific topographic survey, prepared by a licensed land surveyor, that includes representative cross sections and a figure showing changes in the slope angle of the coastal bluff. Peer review by a technical specialist chosen by the City, and paid for by the applicant, may be required.
- F. Planning Commission (or City Council or the California Coastal Commission on appeal) shall make all determinations regarding coastal bluff edge to be used in the interpretation of the policies of this Coastal LUP as part of the Coastal Development Permit process.

**Policy 5.1-70** Coastal Bluff Edge Development Buffer Calculation. The methodology to be used by California licensed Geotechnical Engineers or Certified Engineering Geologists for analyzing site-specific Coastal Bluff Edge Development Buffer is described below:

*Step 1.* Identify the coastal bluff edge consistent with Policy 5.1-69 *Location of Coastal Bluff Edge*.

*Step 2.* Determine a “slope stability buffer.” Evaluate the stability of points along the coastal bluff edge. If a screening-level analysis of the top of the coastal bluff shows a potential for slope instability, then a detailed field investigation and quantitative slope stability analysis shall be conducted to establish a “slope stability buffer.” The slope stability buffer is the area landward of the coastal bluff edge line where the minimum factor of safety (1.5 static and 1.1 pseudo static) cannot be met. When determining the slope stability buffer, the minimum factor of safety is analyzed without the use of existing or new slope stabilization or shoreline protection devices, except for existing major public shoreline protection and flood protection devices (breakwater and other protection devices for the Harbor, Laguna Channel Tide Gate, and Pump Station Facility, etc).

*Step 3.* Determine the “coastal bluff erosion buffer.” A site-specific evaluation of the long-term coastal bluff retreat rate at the site shall be conducted that considers not only historical coastal bluff retreat data, but also acceleration of coastal bluff retreat caused by sea level rise and any known site-specific conditions. Such an evaluation shall be used to determine the distance from the coastal bluff edge line (or from the slope stability buffer line, if applicable) that the coastal bluff might reasonably be expected to erode over the expected life of the principal structure (assumed to be 75 years for single-unit residences and commercial structures; otherwise determined on a case-by-case basis for public infrastructure), factoring in the effects of sea level rise, and without the use of existing and new slope stabilization or shoreline protection devices, except for existing major public shoreline protection and flood protection devices (breakwater and other protection devices for the Harbor, Laguna Channel Tide Gate, and Pump Station Facility, etc). Historic erosion rates can be determined by examination of historic records, surveys, aerial photographs, studies, or other evidence showing the location of the bluff edge

through time. A minimum of 50 years' worth of historic data is generally used to evaluate historic erosion rates.

*Step 4.* Determine the Coastal Bluff Edge Development Buffer. Development shall be setback from the coastal bluff edge the distance needed to: ensure slope stability (the slope stability buffer), ensure the development is not endangered by erosion (the coastal bluff erosion buffer), and to avoid the need for existing and new slope and shoreline protective devices over the expected life of the structure.

*Note:* Modifications to the prescribed buffer methodology may be approved by a City Environmental Analyst to reflect updated guidance on sea level rise as it becomes available.

**Policy 5.1-71** Historic Coastal Bluff Edge. The line depicted on Figure 5.1-2 *Coastal Bluff Edge* as "Historic Coastal Bluff Edge" east of Shoreline Park and west of Pershing Park is a historic coastal bluff edge that meets the California Code of Regulations Section 13577(h)(1) definition of coastal bluff that is used to establish the appeal jurisdiction for Coastal Development Permits and to determine whether projects are exempt from obtaining Coastal Development Permits. This definition of coastal bluff includes bluffs that historically (generally within the last 200 years) have been subject to marine erosion. The "Historic Coastal Bluff Edge" area used to be a coastal bluff, subject to marine erosion, prior to the construction of the Harbor in the 1920s. This historic coastal bluff area, however, shall not be subject to the policies in this Coastal LUP required specifically for all other coastal bluffs. All other policies of the Coastal Land Use Plan, including those relating to steep slopes, slope stability, and general erosion, would still apply as they do for any other area of the Coastal Zone. However, this policy shall expire in the event that sea level rise causes marine erosion to recommence at the toe of the bluff in this area.

**PRELIMINARY GEOLOGIC INVESTIGATION**

***Levine Residential Project  
1553 Shoreline Drive  
Santa Barbara, California***

***May 7, 2020***

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## References

May 7, 2020

Mr. Peter Levine  
C/o Coldwell Banker  
1290 Coast Village Road  
Santa Barbara, California 93108

Attn: Ms. Crysta Metzger

Re: **Preliminary Geologic Investigation - Updated**  
**New Coastal Residential Project**  
**1553 Shoreline Drive**  
**Santa Barbara, California**  
**APN 045-173-043**

Dear Mr. Levine:

## **1. INTRODUCTION**

Pursuant to your request, we present herewith the results of our preliminary geologic investigation of the above captioned beach front property. It is our understanding that you propose construct a new residence and garage on the vacant beach front parcel. The proposed new residence is to be located approximately 90 feet or more landward from the surveyed top of slope (76 feet from the California Coastal Commission coastal bluff edge) based on a 75 year life expectancy, as described in the Coastal Bluff Edge Development Buffer (City of Santa Barbara's Coastal Land Use Policy 5.1-70).

We have reviewed the conceptual plan by Tom Ochsner, Architect (Dated May 6, 2020), landscape plans by True Nature (dated May 6, 2020), and Drainage Plan (Sheet C1; dated May 6, 2020) to construct a new residence, garage, pool, and spa landward (north of) the projected 75 year structural set back line, which is also known as the City of Santa Barbara's Coastal Bluff Edge Development Buffer. We have also reviewed the Geotechnical Slope Stability analyses by Braun & Associates (dated November 5, 2019) for the proposed development of the site.

The purpose of this study was to evaluate the general geologic conditions associated with the proposed development of the property and consistency with City of Santa Barbara's Local Coastal Land Use Plan (certified August, 2019). This report reviews both the regional and site specific geology and analyzes the potential for geologic hazards and their associated effects on the project. Specifically, this report addresses the potential for slope instability, sea cliff retreat, faulting potential, erosion and drainage control problems.

The location of the subject property and the general geologic conditions of the surrounding area are graphically shown on the attached map entitled **REGIONAL GEOLOGIC MAP** (see Figure 1). Details of the current geologic conditions along the coastal bluff and surrounding area are presented on the **SITE GEOLOGIC MAP** (see Figure 2).

This study was conducted in accordance with presently accepted procedures as specified in the City's Coastal LUP, consistent with the scope of the proposed project, although no warranty is stated or implied.

It is important to understand that coastal bluff retreat is a dynamic, on going process that will continue in the future. As with any coastal bluff development, there is always some unpredictable risk of slope instability, differential settlement, seismic impacts, erosion and drainage control difficulties, or other potential geologic hazards that could affect the project. Implementation of the recommendations outlined later in this report is meant to reduce the level of risk, although it may not be able to be totally eliminated.

## **2. FIELD INVESTIGATION**

Representatives from our office spent approximately 2 days on the site and surrounding area conducting a field investigation. Our field analysis consisted of a reconnaissance level geologic mapping of the southern portions of the subject property and surrounding area and the excavation of a 50 foot deep, 24 inch diameter boring (#1), and examination of the exposed bedrock on the coastal bluff and surrounding area of the subject property. The deep boring was also drilled to provide sampling for laboratory testing for shear analyses as part of the Slope Stability Study by the geotechnical engineering firm of Braun Associates (report dated November 5, 2019). The purpose of the subsurface boring was to identify and evaluate the local earth materials from down hole analyses, and to gather bedding plane and fracture data in the vicinity of the proposed building envelope and slope stability analyses. The location of the geologic boring is shown on the **SITE GEOLOGIC MAP** (see Figure 2). A **GEOLOGIC CROSS SECTION** has been constructed through the parcel with data gathered by the boring depicted on the cross section, also shown on Figure 2. A graphical detail of the 50 foot deep boring is also shown on Figure 3. A **Field Boring Log** describing the earth materials encountered in the 50 foot deep boring on the parcel is denoted as Figure 3

## **3. GEOGRAPHY**

### **3.1. Setting**

The parcel is located at 1553 Shoreline Drive in Santa Barbara, California. The northern and central portions of the property are situated on an elevated marine terrace, south of Loyola Drive. The southern portion of the property includes the coastal bluff and beach area to the south. The property is currently undeveloped with an exception to a northern security fence. A corrugated metal drainage pipe (cmp) is found just west of the property line, conveying runoff water from Loyola and Shoreline drives via the City Storm drain. A new proposed residence, garage, pool, and spa are to be located on the elevated terrace, in the northern portions of the parcel; approximately 76 feet landward (north) of the California Coastal Commission, mapped coastal bluff edge.

### **3.2. Topography**

The northern portions of the parcel are situated on an uplifted terrace with a gentle ocean ward slope of approximately 4° to the south. The slope angles on the moderate to steep sloping coastal bluff face range from approximately 45° to 70° or more in some areas, with an average slope angle of approximately 65° along the coastal bluff . Elevations on the property range from a low of approximately 5 feet above sea



level near the southern property line to a maximum of approximately 113 feet near the northwest corner of the property, according to a topographic survey conducted by Prober Land Surveying (dated April 15, 2019).

## **4. GEOLOGY**

### **4.1. Regional Geologic Setting**

The South Coast is part of the Transverse Range Province of California, locally dominated by the east-west trending Santa Ynez Mountain Range and adjacent coastal valleys. Folding and faulting of the region through time has created a complex geologic setting. Consolidated shale, siltstone, and sandstone bedrock of Cretaceous through Miocene age make up the majority of the Santa Ynez Range. Much younger (typically Pleistocene age) unconsolidated to weakly consolidated deposits, typically composed of the erosional remnants of the older formations, are commonly found in the lower elevations between the high mountains and the shoreline. These materials typically overlie the bedrock as an unconformity (a depositional hiatus between the two formations). The earth materials that are in close proximity to the project site are described in greater detail in the following section.

### **4.2. Local Geology**

#### **4.2.1. Soils**

Our investigation of the property and surrounding area revealed a silty sandy soil, fill material, beach sand, Older Alluvium (Terrace Deposit), and the Monterey Formation. The soil type found on the northern elevated portions of the subject property and around the proposed residence and auxiliary structures consists of silty sand with gravel mostly composed of yellow brown sandstone pebbles and cobbles to 10 inches in diameter. The soil is derived from the gradual weathering of the underlying Older Alluvium and gradual deposition of sediments by wind and water processes.

#### **4.2.1. Fill**

An approximate 3.5 foot deep layer of fill material was found in the central portions of the elevated terrace. The fill is composed of a light brown, fine grained silty sand with organic debris and is denoted as "Fill" on Figures 2 & 3. Any loose fill material found near the proposed residential foundation would need to be removed and re-compacted if present and/or the foundation would need to extend below the fill material.

#### **4.2.2. Landslide and Slope Stability**

Numerous landslide features were observed on the coastal bluff up and down the coast on the coastal bluff, although there was no evidence of significant past landslide activity on the subject property. There is a reference to a "probable mature landslide" on the subject property and neighboring parcels. Review of a Landslide Hazard Map of the area (Bezore & Wills; DMG Open File Report 99-12; dated 2000) suggests a "probable landslide" approximately 250 feet wide and 200 feet long, situated across 4 parcels

including the subject property. The probable landslide is designated as “dormant-mature” category based on the Keaton & Degraff classification (1996). The “probable landslide exhibits several of the diagnostic landslide features, including but not limited to headwall scarps, rounded toes, etc....but other explanations are possible” (Bezore & Wills; 2000). Based on our recent site inspection of the subject property and review of historic aerial photographs dating back to 1928, the subject property is **not** located within a landslide area as the map suggests. The coastal bluff is composed of in-place shale bedrock with no evidence of deep seated past landslide activity. Likewise, intact bedrock was found within the 50 foot deep boring conducted in the southern portions of the parcel, within the previously mapped “probable landslide”. No landslide was mapped on the property during the detailed bluff mapping by the Geologist Michael Hoover for the City of Santa Barbara in 1978.

The bowl shaped area visible on the coastal bluff may have been mistakenly considered a probable landslide on the 2000 Landslide Hazard Map. Many of the mapped landslides are based on aerial photographic review without field confirmation. Therefore, the existing cove is actually formed from different rates of erosion along the coastal bluff . A very hard, resistant shale bedrock lens has extended out well beyond the bluff forming a small cove at the base of the coastal bluff below the property. Slightly softer shale beds have eroded behind the harder shale lens thereby creating the cove shaped area at the base of the coastal bluff . This is not related to landslide activity.

A large area of heavy vegetation/brush is clearly visible in the 1928 aerial photograph of the property and surrounding parcels which may have prompted the mapped “probable landslide” feature on the USGS Geologic Map (Bezore & Wills; DMG Open File Report 99-12; dated 2000). However, closer inspection of the 1928 and 1938 aerial photographs revealed a small drainage swale cutting diagonally (northwest to southeast) across the Mesa area and exiting through the vicinity of the subject property. The heavy brush visible in the eroded patch as seen in the 1928 & 1938 aerial photographs suggests the area remained heavily vegetated with no farm activity from at least 1928 to 1956, but does not suggest landslide activity.

The closest moderate sized landslide to the subject property had occurred on the coastal bluff on a nearby parcel to the east (1547 Shoreline). Our office had examined that landslide that had occurred in 2001 on the neighboring property. We had conducted numerous investigations on that property and had provided detailed geologic reports on the shallow landslide. This landslide had occurred within the Monterey shale and Older Alluvium largely as a result of unfavorable (unsupported) bedding planes, dipping southward within the Monterey Shale. This unfavorable bedding is not found on the subject property and is therefore not considered a potential hazard to this property.

No significant landslides were noted on the coastal bluff, which explains the steep coastal bluff topographic configuration. Although no observable landslide activity was noted on the property within the 91 years of aerial photographic research, several small, shallow landslides and rock fall have been observed along the steep coastal bluff as a likely result of wave erosion along the base of the coastal bluff within the Monterey Shale and lesser erosion at the top of the slope within the Older

Alluvium (terrace) deposits from past uncontrolled runoff water. The potential for damage to the proposed development from landslide activity is considered low to remote within the 75 year time span. Likewise, excavations for the pool and spa will not impact the bluff stability given the safe distance from the coastal bluff edge.

The greatest contributing sources for the erosion and shallow slope failures include the accelerated erosion and undercutting of the bluff due to wave erosion, consequently steepening and removing the basal support for the coastal bluff. The Monterey shale exposed on the coastal bluff reveals that the bedding planes are inclined (dip) into the surrounding sloping coastal bluff face and therefore the shale bedrock is supported. We have outlined recommendations within this report to reduce the potential for slope instability hazards acting upon the coastal bluff (see Section 6).

#### **4.2.3.Beach Sand**

A southward thickening blanket of beach sand is found at the toe of the bluff and extending into the Pacific Ocean. This Holocene age deposit is denoted as "Qs" on Figures 1 and 2. The beach sand is generally composed of tan colored, unconsolidated, well sorted sands and gravels.

#### **4.2.4.Older Alluvium**

The elevated terrace on the subject property (including the proposed residence and auxiliary structures) is underlain by Late (?) Pleistocene age Older Alluvium (Marine Terrace). This stratigraphic unit is graphically shown as "Qoa" on Figures 1, 2, and 3. The Older Alluvium is generally composed of tan to dark-brown colored, unconsolidated to weakly consolidated sands, silts, clays, and lesser amounts of gravel conglomerate. The gravels mainly consist of sub-rounded to rounded sandstone pebbles and cobbles to 10 inches in diameter (possibly larger) with lesser amounts of smaller diameter chert and quartzite pebbles. Bedding within Older Alluvium on this property is near flat lying to gently inclined (dip) to the south. The total depth of the Older Alluvium on the elevated terrace is variable due to its unconformable contact with the underlying bedrock (Monterey Formation). However, based on review of the subsurface boring, the depth of the Older Alluvium ranges from zero (where it daylights on the coastal bluff ) to approximately 18 feet or more on the elevated terrace (see Figures 2 & 3). The data also suggests a slight northward thickening of the Older Alluvium, which is consistent with nearby geologic data.

#### **4.2.5.Monterey Formation**

Unconformably underlying the Older Alluvium on the property, and exposed along the lower portion of the coastal bluff in the southern portions of the property is the Miocene age Monterey Formation. Several good exposures of the Monterey Formation are found along the coastal bluff. This marine deposited strata is graphically shown as "Tm" on Figures 1 through 3. The Monterey Formation is generally composed of a well bedded, white to tan colored, siliceous shale with interbedded dark gray bituminous shale. Bedding attitudes within the Monterey Formation on the southern portions of the property and surrounding coastal bluff strike northwest southeast and dip to the northeast at approximately 47° to 63°.

The 50 foot deep boring located in the southern portions of the elevated terrace also indicated the presence of northeast dipping Monterey shale bedding. Folded shale with southwest dipping bedding are likely present in the central and northern portions of the property based on projection of bedding planes observed on the coastal bluff. These southwest sloping bedding planes are not likely to contribute to slope related failures within the projected 75 year time span. The northwest - southeast trending Anticline and Syncline fold axis's are shown on the attached cross section (Figure 2). The bedding is locally supported on the coastal bluff since this area is south of the synclinal fold axis.

The Monterey shale has been associated with emission of radon gas in the Santa Barbara area, although typically less than the older Rincon Formation shale. Special ventilation could be considered if unacceptable levels of radon gas are present (more than 4.0 Pico curies per liter).

#### **4.3. Air Photo Review and Analysis**

Our office reviewed several historic aerial photographs of the area to determine if there is overt evidence of past slope instability on the subject property. The photographs utilized for this study included the Fairchild (1928 & 1938), Hurd (1956) Santa Barbara County (1966), and Pacific Western (1989 & 1997) photos, furnished by the Santa Barbara County, Planning and Development Department and more recent photographs by Google, Bing, and California Coastal web sites. Based on review of these photographs, past landslide activity could be seen up and down the coastline with the closest landslide noted on the neighboring parcel to the east in 2001 as previously described. However, no significant landslide activity was noted during the 91 year historic aerial research on the subject property. A large area of heavy vegetation/brush is clearly visible in the 1928 aerial photograph of the property and surrounding parcels which may have prompted the mapped "probable landslide" feature on the USGS Geologic Map (Bezore & Wills; DMG Open File Report 99-12; dated 2000). However, closer inspection of the 1928 and 1938 aerial photographs revealed a small drainage swale cutting diagonally (northwest to southeast) across the Mesa area and exiting through the vicinity of the subject property. The heavy brush visible in the eroded patch as seen in the 1928 & 1938 aerial photographs suggests the area remained heavily vegetated with no farm activity from at least 1928 through 1956. Subsequent development of the neighborhood streets and improved drainage had mitigated the runoff and erosion issues in this area. The drainage improvements included placement of a new, approximate 3 foot diameter, corrugated metal drainage pipe (cmp) placed along the western perimeter of the property. The installation of this cmp clearly improved the drainage conditions on the parcel and surrounding parcels and can be seen on the 1965 topographic maps of the area (City of Santa Barbara Flood Control, dated June 3, 1965) and June 17, 1966 aerial photographs of the site. The 1966 aerial photograph shows the drainage pipe exiting near the top of slope, so it must have been extended down to the toe of the slope in the following years (as seen today) to reduce the erosion potential along the coastal bluff. Review of the June 17, 1966 aerial photographs of the subject property (showing present day Shoreline Drive) and indicate a well-defined top of slope. No recent landslide activity was visible on the property in 2019.

#### **4.4. Erosion, and Drainage Control**

Much of the rainfall that occurs in the area appears to percolate directly into the subsurface. However, there is some evidence that excess surface water runoff may pass down slope as sheet flow causing surface erosion. The Older Alluvium is susceptible to erosion when uncontrolled surface runoff water is allowed to flow over unprotected slopes. Erosion scars were visible along the coastal bluff. The erosion scars are inferred to be the result of concentrated runoff water directed onto the coastal bluff, prior to the City drainage improvements in the late 1950's to early 1960's. The potential for significant erosional damage will be further reduced provided proper drainage control measures are implemented during and after remodel/construction on the property.

A Stormwater Drainage Analyses conducted by Flowers & Associates (updated May 6, 2020) illustrates a stormwater control plan designed to capture runoff from the proposed structures and other impermeable surfaces (i.e. roofs, patios, decks, etc.). Stormwater runoff from the main structure will be conveyed to a permeable paver driveway installation in the northern portion of the property. The permeable paver installation will also provide peak flow attenuation. Stormwater discharged from the driveway installation will be conveyed via a new storm drain that wraps around the east side and then south sides of the residence before connecting to the existing 36 inch diameter corrugated metal drainage pipe (public storm drain) aligned along the westerly property line. Hardscape runoff from new patio and pool areas in the rear of the property will surface drain to proposed bio-treatment planters with 30 mil PVC Geomembrane impermeable liners. Treated stormwater from the water quality planters will be routed to the proposed storm drain connecting to the existing public storm drain southwest of the residence.

Installation of percolation/infiltration pits in the southern portions of the parcel is infeasible due to the potential risk of slope instability and increase risk of landslide activity. Likewise, pumping of stormwater to the street is deemed unreliable considering the potential for plugging, pump underperforming during peak flows, and/or loss of power to the pump. Failure of a pump system would increase the potential for erosion and/or landslide activity due to oversaturation of the failed system.

#### **4.5. Photogrammetric Analysis**

A top of slope had been determined for the site based on review of the Coastal Commission's report prepared by Mark Johnson "Establishment Development Setbacks from Coastal bluff s" (2002). The Johnson report states..."*In a case where there is a step like feature at the top of the cliff face, the landward edge of the topmost riser shall be taken to be the cliff edge...*" (California Code of Regulations, Title 14, §13577 (h) (2)). The top of slope and Coastal Bluff Edge Development Buffer lines identified within this report meet the recommended guidelines for a geologic investigation as established by Mark Johnson (2002). The top of slope has been graphically identified on the SITE GEOLOGIC MAP included as Figure 2 and shown on the Prober Topographic Map (Dated April 15, 2019). An additional "bluff edge" has been generated by the California Coastal Commission (CCC) in 2017 for the property and

surrounding area, using remote LIDAR technology and has been drafted on Figure 2. This CCC coastal bluff edge follows the surveyed top of bluff, although slightly less sinuous than the surveyed top of bluff. However, the CCC coastal bluff edge extends approximately 14 feet landward (northward) in the central portion of the coastal bluff (although no change in slope is noted at this location), but also extends approximately 2 feet seaward of the surveyed top of bluff near the western perimeter of the parcel. The CCC coastal bluff edge will be used as the basis for remaining discussions within this text, although not considered as accurate as the on-site topographic determination by this author.

To aid in the process of determining rates of sea cliff erosion near the subject property, we have conducted a detailed photogrammetric analysis of the site and surrounding area that measures distances between existing fixed marker's and the same fixed marker's as seen in old aerial photographs of the area. Our detailed investigation of coastal bluff retreat included the establishment of several fixed points on the subject property and at the base of the bluff that could be identified on old air photos and is still in place in the field today (i.e. rock outcrops on the beach, neighboring residences, road, etc.). We have also reviewed previously published and unpublished reports and maps that document rates of coastal bluff retreat elsewhere along the South Coast.

Initially, air photos of the area taken in 1928 (Fairchild, 1928) were inspected and reviewed. These older photographs were not particularly useful for this project because of their relatively small scale (1 inch equals 1,500 feet). We were able to identify several markers on the 1928 photos that are still located in the area today (e.g. Shoreline Drive to the east). However, no coastal bluff retreat rate data could be determined from these stations on the 1928 photos because of its relatively small scale. We then reviewed a series of high resolution, large scale photographs from the Santa Barbara County, Resource Management Department on June 17, 1966 (scale 1 inch = 250 feet). Several key features on the 1966 photos are still currently present in the area with which to accurately determine the amount of retreat that has occurred since that time (existing street and curb and neighboring houses). By viewing the aerial photo (stereo) pairs with the aid of a stereoscope, we were able to simulate a three dimensional view of the site and surrounding area to determine the approximate location of the top of bluff in relationship to the fixed markers. By analyzing these photo pairs and contrasting them with the existing sea cliff location, subtle changes along the coastline were measured.

The most distinct, man-made feature that could be seen and photogrammetrically measured in the 1966 photos, and is still present in the area is the current Shoreline Drive placed prior to 1965. Measurements were made from the top and toe of the sea cliff in the 1966 photographs and 1965 topographic map and compared to the present measurements recently made in the field. A total maximum retreat of approximately 23 feet was measured at the western base of coastal bluff, during the 54-year time period (from June, 1965 topographic map to present). This area was subject to higher erosion rates during the 54 year time period since the City Storm Drain exits near the toe of the coastal bluff at this location. A lesser amount of erosion, approximately 17 feet was measured at the western top of the slope during the

same 54 year time period. This is equal to average annual retreat rate of approximately 3.8 inches per year. Using the more conservative, 23 feet of erosion at the base of slope, provides an average approximate retreat rate of 0.425 feet per year (23 feet/54 years), or 5.1 inches per year. This is consistent with other studies conducted along the Mesa with similar geologic conditions. For example, a study conducted on the neighboring parcel to the east suggested an average rate of retreat of approximately 4.5 inches per year.

Application of the site specific, average retreat rate of 5.1 inches per year and a design life of 75 years (per City of Santa Barbara Coastal LUP Policy 5.1-70), the total theoretical coastal bluff retreat for this site would be approximately 32 feet from the surveyed top of bluff. However, we must consider the potential for rising seal levels, as described below.

We have reviewed the recent studies regarding the effects of rising sea level on the California and Santa Barbara coastlines titled "City of Santa Barbara Sea-level Rise Vulnerability Study" by Griggs et al (2012) and Denka et al (2014). These studies suggest an average rate of sea level rising along the California coast has been approximately 8 inches since 1900. Projection of the future rise in sea level has been estimated to rise approximately 4.7 to 24 inches by 2050. Theoretical projections of future ocean levels beyond 2050 become more difficult to predict with a range of 16.5 to 79 inches by 2100, depending on which model is used.

We have also reviewed the recent studies regarding the effects of rising sea level on the California and Santa Barbara coastlines. Review of the City of Santa Barbara Draft Vulnerability Assessment Update (November, 2018) suggests the possibility of erosion impacting Shoreline Drive by 2100, assuming sea level rising 6.5 feet. These estimates have been assigned a 0.5% probability of occurring based on the OPC (2018) State Guidance based on Kopp et al (2014) "Projected Sea-Level Rise For Santa Barbara". The same table suggests a more likely range of 1.2 to 3.1 feet of sea level rise by 2100.

We have also reviewed the Santa Barbara County Coastal Resiliency Project, "*Sea Level Rise & Coastal Hazards Vulnerability Assessment*" (July 2017) and the effects of rising sea level on the California and Santa Barbara coastlines titled "California Coastal Commission Statewide Sea Level Rise Vulnerability synthesis (December 31, 2016). Chapter 6 of the CCC report, illustrates a Table by the National Research Council, Sea Level Rise Projections (2012). This study suggests an average rate of sea level rising along the California coast has been approximately 7 to 8 inches since 1900. Projection of the future rise in sea level has been estimated to rise approximately 5 to 24 inches by 2050 with a 2000 year baseline. Theoretical projections of future ocean levels beyond 2050 become more difficult to predict with a range of 17 to 66 inches, depending on which model is used. Another study by Deonto & Pollard (2016) suggests another 3 feet of sea level rise is possible if considering ice melt in Antarctica and Greenland.

A methodology for predicting the change in coastal bluff retreat rates based on variable changes in sea level has been estimated by Young (2014). The report provides an equation that predicts future erosion based on the change in sea level. The equation:  $R_2 = R_1 (S_2 / S_1)^m$  where  $R_1$  and  $R_2$  represent past and

future coastal bluff retreat rates and  $S_1$  and  $S_2$  represent past and future sea level rise, respectively. The exponent  $m$  may be assumed to be 0.5 based on a study by Walkden & Dickson (2006). Based on this formula, the following value is determined:

$R_1$  = the calculated retreat rate for the past 54 years of 5.1 inches/year

$S_1$  = the sea level rise from 1965 to present or 7.1 inches in 54 years

$S_2$  = the sea level rise in 2073 (2019 + 54 years), conservatively estimated to be 24 inches

$R_2$  = the calculated retreat rate in 54 years (2073), if sea level rises 24 inches, is 9.38 inches/year

Therefore, with a historic coastal bluff retreat rate of 5.1 inches per year and a projected future retreat rate of 9.4 inches per year based on sea level rising 24 inches in 54 years; the average retreat rate can be calculated over the next 54 year period at 7.25 inches per year. This is equivalent to approximately 32.6 feet of retreat in the next 54 years. Extrapolation of this data over a 75 year life for the proposed project the total retreat rate can be estimated to be approximately 45.3 feet for the project site.

A recently adopted California Coastal Commission guidance document, the "Sea Level Rise Policy" dated November 7, 2018 contains future sea level rise projections under various time scales and risk scenarios, which were developed in a 2017 report by the California Ocean Protection Council under direction of the State of California (OPC, 2017). For Santa Barbara (Appendix G, Table G-8 in the CCC 2018 document), the projected sea level rise (SLR) at the year 2100 is 3.1 feet under the "Low Risk Aversion" category, which is defined as being 17 percent likely that SLR will exceed the 3.1 foot estimate. Under a "Medium – High Risk Aversion" category, an estimate is provided that there is a 0.5 percent probability that SLR will be higher than 6.6 feet at the year 2100. The 2018 state guidance recommends that the "Medium-High Risk" category be used for establishing setbacks for residential development given the uncertainty of the SLR projections, the limitation of adaptation options and the potential risk to life and property. The sea level rise projections are presented in 10 year increments from 2030 to 2150, although predictions beyond 2100 are considered less reliable (see Table G-8 in the Appendix). We have utilized the medium-high risk aversion (0.5 % probability the of SLR exceeding this data) over 10 year "snapshots" to estimate accelerated rate of coastal bluff retreat, as described below.

Coastal bluff retreat rates have been estimated and measured by various investigators on the South Coast of Santa Barbara County (Norris, 1968; Cottonaro, 1975; Hoover, 1986; etc.). Average retreat rates of 1.5 feet per year or more have been measured at locations where blufftop drainage was uncontrolled and/or geology and wave exposure were conducive to high retreat rates (e.g. Isla Vista). Bluff retreat rates have been measured previously by this office and by other geologists at nearby locations with geology and coastal exposures similar to the Mesa area. Site surveys at those locations indicate an average blufftop retreat rate of roughly 0.4 feet per year.

The future rate of coastal bluff retreat is estimated by application of the specific historical retreat rate, estimated as described above, to a future increase in the rate of bluff retreat determined by the U.S. Geological Survey's Coastal Storm Modeling System also known as CoSMoS. This widely recognized



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model simulates coastal hazards that manifest as a result of an ocean wave data set input, storm surge, tides and sea level rise. The CoSMoS model (current version listed as CoSMoS 3.0) includes a shoreline hazard map with various historic and projected bluff edge retreat rate at noted transect locations. The transects with numerical identifiers are separated by roughly 300 feet horizontally along the coastline in the Shoreline Drive area. The CoSMoS transect number 3993 is located at the subject property. Please see the aerial image of the Shoreline Drive area obtained from the CoSMoS model in the appendix of this report. The data for that transect lists the historical Coastal bluff retreat rate at 0.27427 meters per year (0.90 feet per year). The reported CoSMoS historical retreat rate is based on USGS evaluation of historic regional topographic maps and regional aerial imagery (Hapke and Reid, 2007), and not the photogrammetric based site specific historical retreat rate determined by our office as described above. The CCC (2018) projected the upper limit of sea level rise to be 0.7 feet (0.213 meter) at year 2030 under the "Medium-High Risk Aversion" category (Table G-8). The CoSMoS model at the Shoreline Drive transect number listed above shows that for a sea level that has risen by 0.25 meter (the closest value to the 0.21 meter rise projected at 2030 by the 2018 CCC document), the coastal bluff retreat rate has by that time increased to 0.310 meters per year (1.02 feet per year). The comparison of the projected future CoSMoS retreat rate to the historical CoSMoS retreat rate shows a change in the rate equivalent to 0.12 ft/year. An increase from 0.90 feet per year to 1.02 feet per year ( $0.90 + 0.12 = 1.02$ ), is equivalent to a 13 percent increase in the retreat rate. The following 10 year periods have been analyzed in the same way. The incremental changes in sea level (CCC, 2018) at Santa Barbara and the corresponding Coastal bluff retreat rate percentage change are summarized on the following table. Also included is the incremental percentage change in retreat rate applied to the site specific historical retreat rate and the resulting total horizontal cliff edge retreat for the noted time increment.

CoSMoS Historical Retreat Rate (baseline) = 0.27427 meters per year (0.90 feet per year) for CoSMoS Transect Station 3933 at 1533 Shoreline Drive, Santa Barbara					
Time Increment (Years)	Change in Sea Level (meters/feet) CCC Medium-High Risk Aversion	Percentage Increase in Retreat Rate from CoSMoS Historical Rate	Site Specific Historical Retreat Rate (ft/year)	New Average Site Specific Annual Retreat Rate (ft/year)	Incremental Estimated Retreat (feet)
2020-2030	0.21 m/ 0.7 ft	13%	0.425	0.48	4.8
2030-2040	0.34 m/ 1.1 ft	13%	0.425	0.48	4.8
2040-2050	0.55 m/ 1.8 ft	26%	0.425	0.53	5.3
2050-2060	0.76 m/ 2.5 ft	35%	0.425	0.57	5.7
2060-2070	1.01 m/ 3.3 ft	53%	0.425	0.65	6.5
2070-2080	1.31 m/ 4.3 ft	66%	0.425	0.71	7.1
2080-2090	1.62 m/ 5.3 ft	87%	0.425	0.79	7.9
2090-2095 (est. 5 years)	1.80 m/ 5.9 ft	105%	0.425	0.87	4.4

Total Retreat at 2095 = 46.5 feet

Applying the site specific, survey based, historical retreat rate of 0.425 feet/year described above under Bluff Retreat Rate-Historical to the various incremental percent increase yields a total estimated future average retreat of 46.5 feet due to anticipated accelerating sea level rise. The 46.5 feet of predicted future coastal bluff retreat using the CoSMoS Method is nearly identical to the 45.3 foot retreat rate determined using the Young (2014) formula initially provided. Therefore the average of the two methods is recommended for this project, using an average of 46 foot/year coastal bluff retreat rate. That figure is shown as the future retreat at the toe and top of the bluff for the next 75 years on the Cross-Section on Figure 2, attached to this report. Erosion rates greater than what has been projected in this report is not expected by this author (0.5% probability as per the State) at this site due to the natural geologic fortification of the coastal bluff with the southward sloping resistant siliceous shale beds stacked along the coastal bluff to act as armored buttress supports for these bluff and terrace deposits above. Wave runup is also not considered a significant factor at this site since the top of the coastal bluff stands at approximately 100 feet above current sea level and well above projected worst case sea level elevations and run up calculations.

It is noteworthy that the preliminary Coastal Bluff Edge Development Buffer line prepared for the City of Santa Barbara, suggests the setback line is approximately 60 feet from the top of slope (Hoover, 1978). This setback line was considered preliminary only and to be verified by an on-site geologic investigation.

We have also reviewed the 75 year coastal bluff retreat line Map prepared by URS for the City of Santa Barbara (2009). The study conducted by URS is not based on site specific data, while the information gathered from our office is based on actual past rates of erosion on the subject property and is consistent with other rates of retreat as measured from the neighboring properties along the beach.

It should be noted that coastal bluff retreat rates are closely related to weather, tides, and surf conditions. While average long term rates of coastal bluff retreat are usually reported as occurring at rates of inches or feet per year, the actual process is typically episodic, with sudden larger than average losses occurring when severe storms and/or high surf episodes attack the coastline, followed by years or even decades of very little retreat. Examples of recent severe winter conditions occurred during the winter seasons of 1969-70, 1979-80, 1982-83, 1994-95, 1997-98 and 2004-05. Because the time interval over which our coastal bluff retreat analysis included several of these severe winter erosion episodes, it is our preliminary opinion that the above listed average rate calculations are reasonably representative of a longer term time frame. A detailed coastal bluff retreat study by Norris (1968) found evidence for coastal bluff retreat rates elsewhere along the greater Santa Barbara Coast from near zero to as high as 10 inches per year based upon measurements from fixed markers between 1927 and 1947.

We have reviewed the City of Santa Barbara's "Coastal bluff Edge Development Buffer Calculation" Policy 5.1-70 to determine the buffer without the use of existing or new slope stabilization or shoreline protection devices. We have also reviewed the "Establishment Development Setbacks from Coastal bluff

s” by Mark Johnson (2002). The Johnson study suggests development with a static factor of safety of 1.5 from the top of slope and a pseudo-static factor of safety of 1.1. Therefore, a site specific slope stability analysis was conducted on the property by our office and the Geotechnical Firm of *Braun & Associates*. The Braun Slope Stability Report (dated November 5, 2019) using direct shear soil samples was plotted using GeoStudio’s (2019), a Computer aided software program. The study results suggests an approximate 30 feet sea cliff setback from the CCC coastal bluff edge, which represents a static factor of safety of greater than 1.5 and a pseudo-static factor of safety of greater than 1.1. Adding the projected 75 year bluff erosion of 46 feet (after assuming rising sea level) to the 30 foot line generated as the 1.5 factor of safety line suggests a safe 75 year Coastal Bluff Edge Development Buffer line of approximately 76 feet from the CCC coastal bluff edge along the central cross section. An approximate 76 foot Coastal Bluff Edge Development Buffer line has been averaged from the CCC coastal bluff edge to create a less sinuous setback line and plotted on Figure 2 (scale 1 inch = 10.2 feet due to shrinkage while copying).

Likewise, improvements in vegetation and drainage on the property, as recommended will also reduce the potential for erosion on the coastal bluff . The proposed development landward (north) of the proposed 75 year, 76 foot Coastal Bluff Edge Development Buffer line from the CCC coastal bluff edge, is therefore geologically feasible since the setback line is based on the 1.5 factor of safety for slope stability coupled with the maximum anticipated erosion of 46 feet over the next 75 years. The recommended 76 foot Coastal Bluff Edge Development Buffer from the CCC coastal bluff edge should therefore provide an adequate buffer for future erosion/rockfall activity. No fortification/shoring of the coastal bluff or toe of the slope is necessary for the lifetime of the proposed development.

## **5. CONCLUSIONS**

The bedding planes of the Monterey Formation are oriented (strike) such that the dip angles are into the coastal bluff and are therefore supported. Analysis of the coastal bluff below this site suggests that the average retreat rate in the exposed areas is approximately 5.1 inches per year during the last 54 years. Application of the 7.25 inches per year retreat rate, using USGS CoSMoS model and the methodology developed by Young (2014), has yielded a more conservative total retreat of 46 feet assuming sea level rise occurs at the “*Medium-High Risk Aversion*” category (0.5% probability that the sea level rise value exceeds the estimate) for a 75 year design life (Santa Barbara City Coastal bluff Policy, 5.1-70).

A slope stability analyses by Braun & Associates (dated May 22, 2019) using shear testing and a Computer aided software program suggests an approximate 30 foot line from the CCC coastal bluff edge. This represents a static factor of safety of greater than 1.5 and a pseudo-static factor of safety of greater than 1.1. The projected 75 year erosion of 46 feet, after assuming rising sea level is then added to the 30 foot line generated as the 1.5 factor of safety line suggests a safe 75 year Coastal Bluff Edge Development Buffer line of approximately 76 feet from the California Coastal Commission (CCC) coastal bluff edge as shown on the Site Geologic Map (Figure 2). We therefore recommend a Coastal Bluff Edge

Development Buffer of 76 feet from the CCC coastal bluff edge. All excavations, grading, and permanent proposed development shall be conducted landward of the 75 year sea cliff setback line.

The above findings are the result of an approximate 2 day field investigation of the property and surrounding area, review of a 50 foot deep, 2 foot diameter subsurface boring, analyses of several historic aerial photographs, and review of relevant geologic literature, maps, and cross sections. Based on the projected erosion, slope stability analyses considering rotational and/or translational slope failure, and projected sea level rise, the proposed 76 foot Coastal Bluff Edge Development Buffer line from the CCC coastal bluff edge, provides an adequate and safe setback for the next 75 years, with acceptable factors of safety. Therefore, no structural mitigation or slope stabilization is required to support the proposed development. A typical continuous conventional concrete footing and/or spread footing foundation design is appropriate for the proposed residential structure, as likely to be recommended in the soil engineering report, once completed.

Likewise, no deepened footings, slope stabilization, or shoreline protection devices are needed if the proposed residential structures are placed landward (north) of the 75 year Coastal Bluff Edge Development Buffer line. The disturbed area following grading of the site should be planted and covered with biodegradable erosion control blanket to further reduce the potential for erosion and/or slope instability. The proposed residential development is also considered geologically feasible since the proposed foundation improvements would not materially impact the sea cliff stability now or into the foreseeable future.

Based on these findings, it is our conclusion that it is geologically feasible to construct the proposed residence and auxiliary structures landward (north) of the 76 foot Coastal Bluff Edge Development Buffer line, from the CCC coastal bluff edge. The proposed development south (oceanward) of the 75 year setback line, includes temporary structures (easily removed), such as fencing and plantings, etc. For example, a 42 inch tall vinyl fence is proposed 10 feet or more from the CCC bluff edge, as shown on the landscape plans presented by True Nature (dated May 6, 2020). The fence will be supported with 2 inch diameter steel posts set in concrete to a depth of 15 inches below the ground surface. These hand dug post foundation holes, posts, and fencing and proposed plantings will not create or contribute to the erosion, geologic instability, or destruction of the coastal bluff or surrounding area. The proposed development will minimize the risks to life and property; assure stability and structural integrity; and neither create or contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area during its expected life, factoring in the effects of sea level rise. In fact the area will benefit from the development and proposed improvements as outlined in this report and those to be provided by your Landscaper and Civil Engineer. The above conclusions are based on historic data and current theoretical predictions of sea level rise models. These data can be used as guidelines for future bluff retreat, although these estimates will likely require adjustments as actual conditions are documented.

## **6. RECOMMENDATIONS**

In order to reduce the potential for adverse geologic conditions that could affect the subject property, we make the following site geologic development recommendations:

### **6.1. Coastal Bluff Edge Development Buffer**

Based on a worst-case potential bedding plane failure along the coastal bluff, a maximum 76 foot Coastal Bluff Edge Development Buffer line has been generated from the CCC bluff edge. We therefore recommend that any new permanent structures (i.e. residence, pool, concrete decks, drainage, etc.) be located 76 feet from the CCC coastal bluff edge as shown on Figure 2. Temporary development such as pavers, fences, etc that can be readily removed if needed may be placed south (oceanward) of the 75 year Coastal Bluff Edge Development Buffer line.

### **6.2. Foundation**

The proposed foundation may utilize typical conventional continuous concrete footings as recommended in the soils engineer (to be prepared) since the proposed structures are located landward (north side) of the projected 75 year Coastal Bluff Edge Development Buffer line. The proposed construction of the residence, garage, pool, spa, and drainage system are geologically feasible with no significant impacts to the coastal bluff or surrounding area. Excavations for the pool and spa will not impact the bluff stability given the distance from the coastal bluff edge.

### **6.3. French Drains**

The interbedded Older Alluvium and the soil/fill/shale boundaries may occasionally contain perched groundwater during the rainy season. Some of this fluid may migrate toward any crawlspaces. We therefore recommend that all building components including basements, crawlspaces, and/or retaining walls that are to be placed below existing (pre-graded) ground surface should be outfitted with a French Drain system to intercept and transport all excess subsurface fluids away from the proposed structures. The captured water should be directed to an appropriate disposal point. Proper design and function of these French Drains is very important in minimizing the potential for water entry into the various structural components.

### **6.4. Erosion and Drainage Control**

All runoff water from impervious areas such as roofs, patios, decks, French Drains, and driveways should be captured and directed through the permeable pavers and/or bio-filtration trenches and into the public storm Drain system as planned (Drainage Exhibit C-1). No surface water or captured subsurface water should be allowed to pass in an uncontrolled manner onto the bluff. Likewise, no collected runoff water may be percolated back into the soil in the southern portions of the parcel, due to the risk of erosion and/or landslide activity. The collected water should be transported to the base of slope via existing City storm drain and/or an appropriate percolation areas located below the permeable driveway on the north side of the property. We recommend that the on site drainage system be inspected and cleaned on a regular basis to ensure it is functioning correctly. A clean-out pipe was detected in the City Storm cnp just off site near the top of slope. This should be equipped with a cap. Minimizing runoff is essential in reducing ground saturation near the proposed building site and along the sea cliff. This, in turn, reduces the potential for slope failure, soil creep, or erosion difficulties.

### **6.5. Vegetation**

The use of deep rooted, drought tolerant plants in the landscaping of the southern portions of the property is recommended in order to minimize the potential for over-saturation and erosion. Thick

***Geologic Investigation New Residence 1553 Shoreline Dr, S.B, CA  
May 7, 2020***

and deep rooted plant varieties help to stabilize the slope and keep it in a state of under-saturation. The re-vegetation program (in areas where the existing vegetation is sparse or to be removed) should be implemented as soon as practical. Minimize the planting of high water use plants (including lawn) within 20 feet of the sea cliff. We have reviewed the *Conceptual Landscape Plan* prepared by True Nature Landscape Architect. (Sheet CL-1; dated May 6, 2020). This landscape plan meets or exceeds the recommendations provided by this author and will not cause significant problems with the bluff property.

If we can be of any further service to you on this or other geologic matters, please contact our office.

Sincerely,

---

Mr. Adam Simmons  
Certified Engineering Geologist & Hydrogeologist  
State of California RG #6234 EG #2015 HG #509

**REFERENCES CITED**

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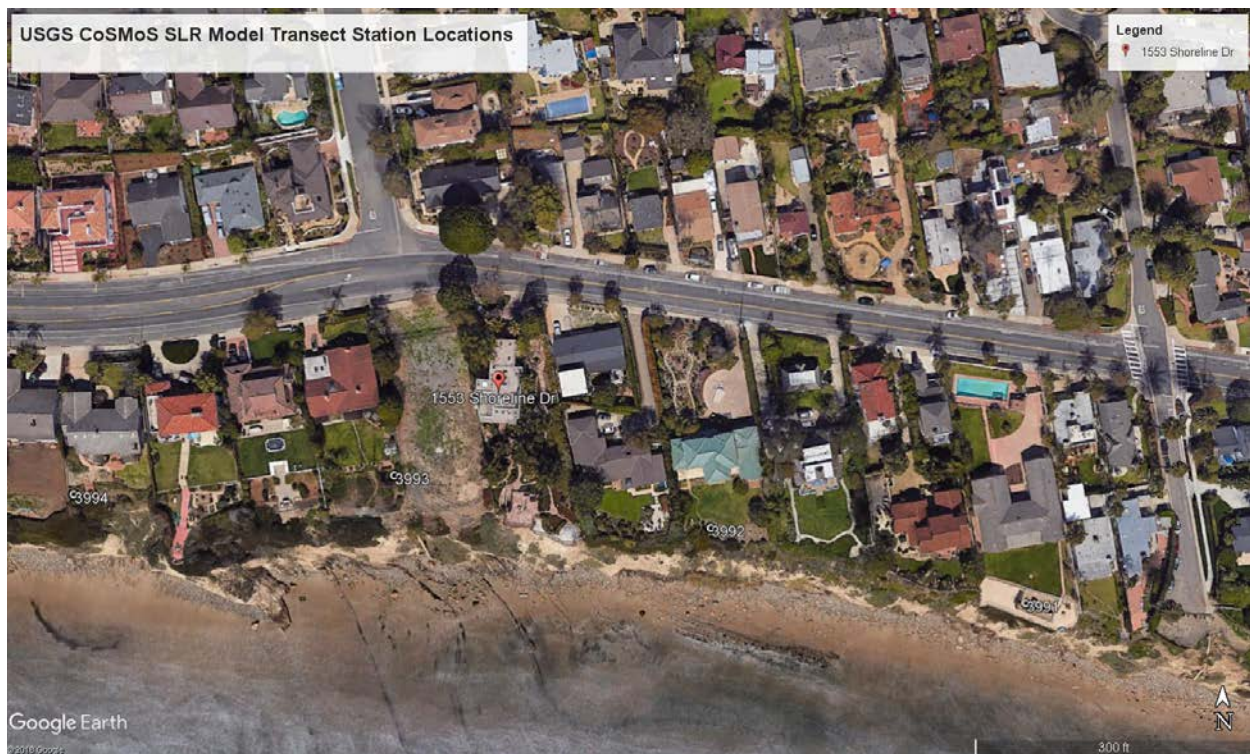
***Geologic Investigation New Residence 1553 Shoreline Dr, S.B, CA  
May 7, 2020***

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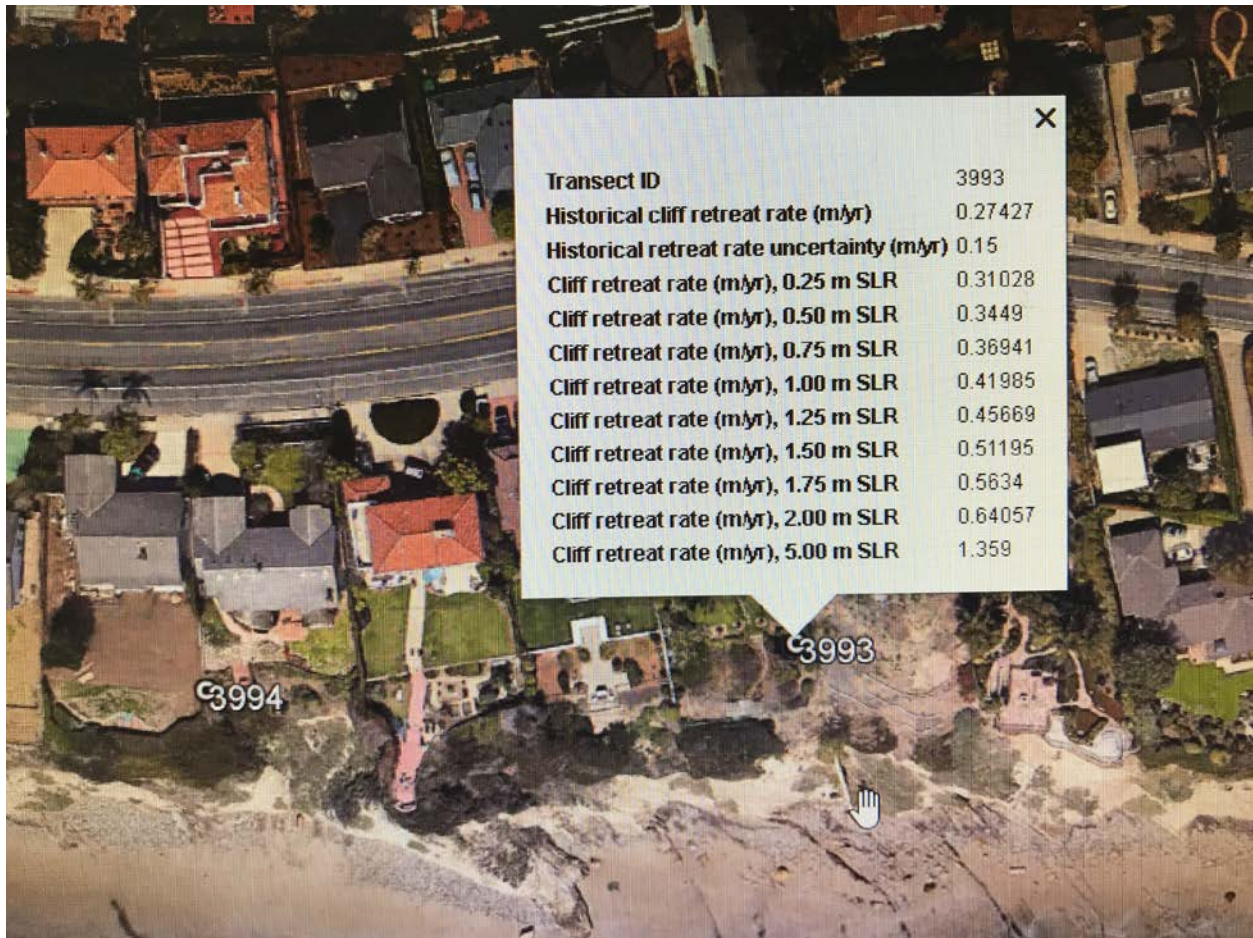
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Transect ID #3993 is located near western property line of vacant lot (1553 Shoreline drive = subject property)





Transect ID 3993 pop-up chart showing cliff (bluff) retreat rates (meters/year) at various sea level rise scenarios (meters)

California Coastal Commission Sea Level Rise Policy Guidance  
Final Adopted Science Update | November 7, 2018

Table G-8. Sea Level Rise Projections for the Santa Barbara Tide Gauge<sup>113</sup> (OPC 2018)

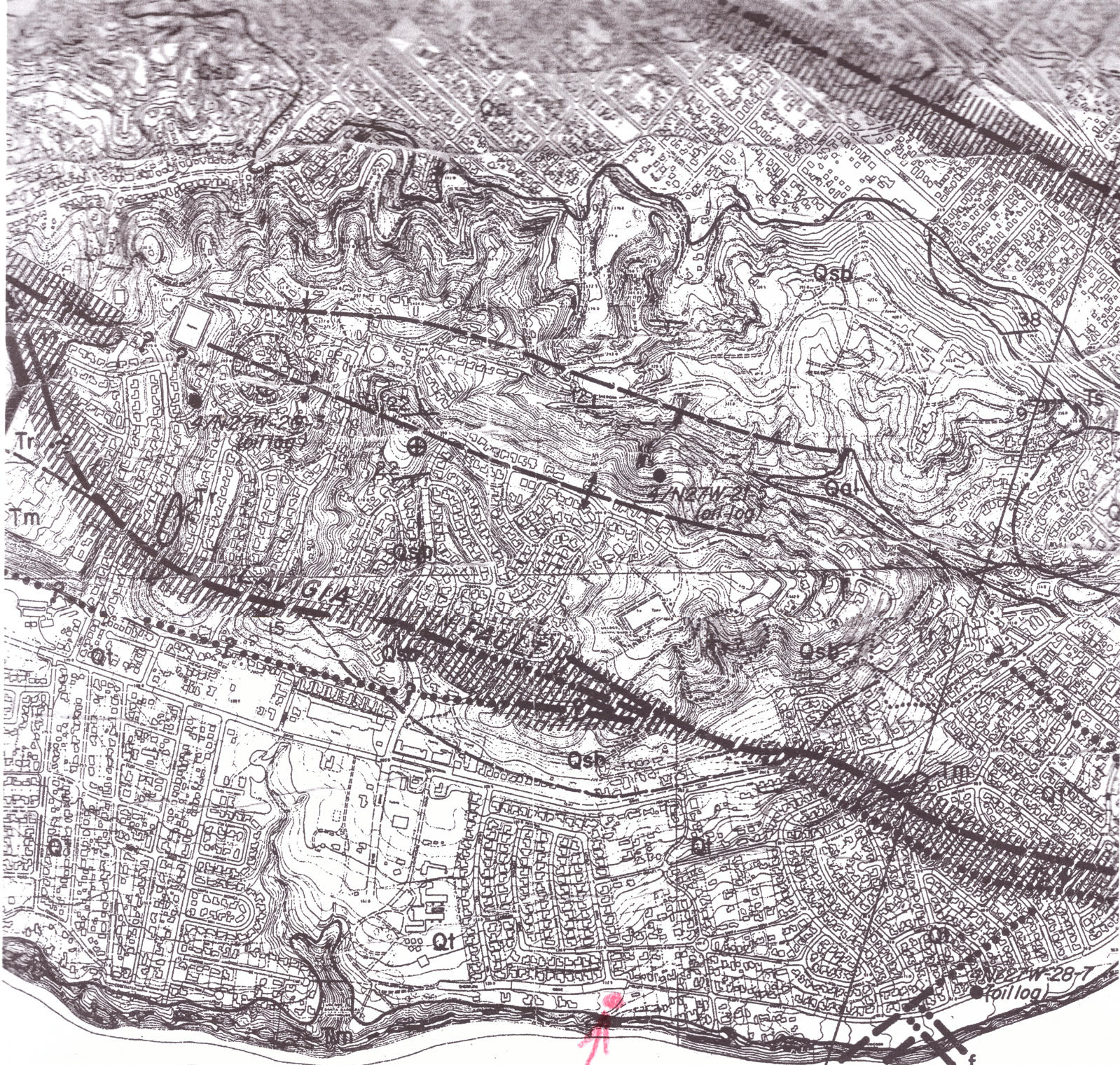
<b>Projected Sea Level Rise (in feet): Santa Barbara</b>			
	Probabilistic Projections (in feet) (based on Kopp et al. 2014)		H++ Scenario (Sweet et al. 2017)
	Low Risk Aversion	Medium-High Risk Aversion	Extreme Risk Aversion
	Upper limit of "likely range" (~17% probability SLR exceeds...)	1-in-200 chance (0.5% probability SLR exceeds...)	Single scenario (no associated probability)
2030	0.4	0.7	1.0
2040	0.7	1.1	1.6
2050	1.0	1.8	2.5
2060	1.3	2.5	3.6
2070	1.7	3.3	4.9
2080	2.1	4.3	6.3
2090	2.6	5.3	7.9
2095	2.8	5.9	
2100	3.1	6.6	9.8
2110*	3.2	6.9	11.5
2120	3.7	8.2	13.7
2130	4.2	9.5	16.0
2140	4.8	11.0	18.6
2150	5.3	12.6	21.4

\*Most of the available climate model experiments do not extend beyond 2100. The resulting reduction in model availability causes a small dip in projections between 2100 and 2110, as well as a shift in uncertainty estimates (see Kopp et al., 2014). Use of 2110 projections should be done with caution and acknowledgement of increased uncertainty around these projections.

<sup>113</sup> Probabilistic projections for the height of sea level rise and the H++ scenario are presented. The H++ projection is a single scenario and does not have an associated likelihood of occurrence. Projections are with respect to a baseline year of 2000 (or more specifically, the average relative sea level over 1991-2009). Table is adapted from the 2018 OPC SLR Guidance to present only the three scenarios OPC recommends evaluating. Additionally, while the OPC tables include low emissions scenarios, only high emissions scenarios, which represent RCP 8.5, are included here because global greenhouse gas emissions are currently tracking along this trajectory. The Coastal Commission will continue to update best available science as necessary, including if emissions trajectories change.

Table 8: A 75 year estimate (2095) was interpreted from the 2090 & 2100 projections (slightly less than half)





1553 Shoreline

B

Hoover (1978)

Scale  
1" = 1,000'

Item III.B 81 of 110

Figure 1



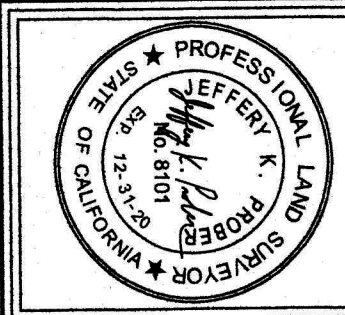


Site Geologic Map Figure 2

G:\LandProject\_2019\Levine 1553 Shoreline Drive\vdwp\Levine 1553 Shoreline Drive v4.dwg 4/22/2019 11:37:20 AM PDT

**Surveyor's Notes:**  
1. BOUNDARY DATA PER RECORD OF SURVEY BK 45, PG.32 (R1) & INSTR. No 2007-40459 O.R. (R2)  
2. HORIZONTAL DATUM: NAD83; COORD. SYSTEM: SPC CA 05 4FT, EPOCH 1991.35  
3. VERTICAL DATUM: NAVD88; INITIAL STA. SBCN 34 - N.1971267.14 E.6042638.62 EL.137.46 (RS 147 70-74)  
4. PARCEL SIZES: 0.55 +/- Acres  
5. A CURRENT TITLE REPORT IS REQUIRED TO PLOT ALL EASEMENT (IF ANY) AFFECTING SUBJECT PARCEL!!!  
6. INFORMATION SHOWN HEREON IS PER A FIELD SURVEY BY PROBER LAND SURVEY DENOTED BY SPOT ELEVATION TO THE HUNDREDTH OF A FOOT. ALL OTHER AREAS ARE PER CITY AERIAL SURVEY SHEET E13

1553 Shoreline Drive  
Santa Barbara, CA  
Topographic Survey



**PROBER**  
Land Surveying  
645 Flora Vista Drive, SB, CA 93109  
(805) 452-9690 plssb@cox.net  
www.ProberLandSurveying.com



## FIELD BORING LOG - Figure 3

JOB NAME: 1553 Shoreline Dr.

DATE: April 9, 2019

BORING NO.: 1

EQUIPMENT USED: Lo Drd - Terra Firma

ELEVATION OF GROUND SURFACE: 110'

DESCRIPTION OF DRILLING SITE: undeveloped lot - 162 Feet south of Shoreline curb

W.O. #: \_\_\_\_\_

TECHNICIAN: Adam Simmons

[illegible]



November 1, 2023

**Mr. & Mrs. Peter & Suzanne Hooper**  
**c/o SEPPS**  
**1625 State Street, Suite 1**  
**Santa Barbara, California 93101**

**Attn: Trish Allen**

**Re: Updated Geologic Investigation – Sea Cliff Study**  
***Proposed single family residence***  
***1553 Shoreline Drive***  
***Santa Barbara, California***

Dear Mr. & Mrs. Hooper:

Pursuant to your request, we are updating the original geologic report dated May 7, 2020 for the proposed residential development on the above described vacant parcel. As part of the review, we have reviewed the revised plans prepared by Thomas Ochsner Architect, regarding the development of a new proposed residence on the above described vacant lot. The revised residential development plans (dated October 3, 2023) indicate the proposed 2-story residence, ADU, and garage will be located approximately 90 feet or more landward from the surveyed top of slope (76 feet from the California Coastal Commission coastal bluff edge) based on a 75 year life expectancy, as described in the Coastal Bluff Edge Development Buffer (City of Santa Barbara's Coastal Land Use Policy 5.1-70). We have also reviewed the conceptual landscape plans by Courtney Jane Miller (Dated October 2, 2023), and Preliminary Grading & Drainage Plan (Sheet C1; dated August 9, 2023). We have also reviewed the Geotechnical Slope Stability analyses by Braun & Associates (dated November 5, 2019) and our Preliminary Geologic Report (dated May 9, 2020) for the proposed residential development of the site. Despite the recent heavy rainfall & surf experienced during the 2022-2023 winter season, the geologic conditions on the property and surrounding sea bluff remain relatively unchanged from our original study in 2019-20. Based on review of the available data, the same 90 foot structural setback line proposed within our original May 7, 2020 geologic report is still applicable today.

A further description of the easterly neighbor's 2001 landslide is provided below. As described in our May, 7, 2020 geologic report, a moderate sized landslide had occurred at the top of the sea bluff in the eastern portions of the neighboring parcel to the east at 1547 Shoreline during the 2000-2001 rainfall season. The wedge shaped 2001 landslide had occurred in the upper east-central portion of the sea bluff approximately 40 to 70 feet east of the subject property. The approximate 25 to 30 foot wide landslide ranged from less than 1 foot near the eastern property line to approximately 8 feet in thickness near the large eucalyptus tree well (tree well remains however the eucalyptus tree has since been removed). The slide had undermined the eastern portions of the neighboring deck with a gunite curtain (previously placed; date unknown) located at the edge of the deck. The eastern portions of the deck had been cut back to the edge of the bluff around 2002-2003.

The cause of the 2001 landslide on the property was due to several factors including the accelerated erosion and undercutting of the lower portions of the sea bluff due to wave erosion, consequently steepening and removing the basal support for the sea bluff. Localized unsupported (daylighted) Monterey shale bedrock bedding planes could be seen in 2001 where wave erosion has eroded and/or undermined the toe of the bluff. The unsupported shale bedding planes create a plane of weakness on the sea bluff, thereby allowing materials above the daylighted bedding to slide toward the ocean. In addition, the 2001 winter saturated the soil, Older Alluvium, and bedrock on the neighboring property. This addition of water increased the overall weight of the earth materials on the bluff, thereby increasing the force of gravity acting upon the earth materials on the bluff.

Localized folding of the Monterey Formation is evident on the sea cliff with a northwest-southeast trending anticline and syncline located on the neighboring property to the east (1547 Shoreline Dr). Bedding attitudes within the Monterey Formation on the neighboring property bluff strike approximately North 43° to 75° West and dip to the north at approximately 34° to 45° and to the south at approximately 54° to 75° or more. Localized folding of the Monterey shale bedding exposed on portions of the sea bluff closest to the concrete deck suggests that the bedding planes are inclined (dip) at angles coincident with the surrounding sloping sea bluff face in this localized area. The 2001 basal slide plane appeared to be coincident with the southwest dipping Monterey shale exposed along the north limb of the chevron fold, with bedding plane dip angle of approximately 54° to 75° to the south. An anticline is located just north of the 2001 landslide failure plane suggesting that the Monterey shale bedrock is supported north of this area. Likewise, north dipping bedrock is found on the lower portions of the sea bluff, below the 2001 landslide, creating additional bluff support. The axial fold planes twist into the sea bluff from east to west, ranging from North 75 west (in the slide area) to approximately North 43 west as the fold plunges obliquely into the sea bluff. Based on the projection of the localized folded bedrock observed on the sea bluff, the fold axes have been projected onto the subject property, north of the exploratory boring and diagrammatically illustrated on the geologic cross section (submitted as Figure 2 on the May 7, 2022 report). Since the fold axes are plunging obliquely into the sea bluff, larger areas of unsupported bedding are not expected, only small to moderate sized surfaces as experienced on the eastern neighboring parcel. Hence the relatively linear coastline for the neighborhood despite the exposure of localized daylighted bedding on the easterly neighboring parcel. The measured historic retreat rate determined for the easterly neighboring parcel was determined to be approximately 4.5 inches per year since during our most recent study dating back from 1965, even with the localized unsupported bedding. Approximately 4 feet of additional erosion had occurred on the easterly neighbor's parcel from 2001 to 2022 (last measured), which this figure still fits within the overall sea bluff retreat rates. Therefore, the calculated retreat rate for the subject property has already included the potential for localized daylighted bedding on the property when considering the overall sea bluff erosion. The proposed residence is therefore situated a safe distance from the sea bluff for

the next 75 years or more as presented on the May 7, 2020 geologic report. Therefore it is my opinion that the proposed drainage development is feasible from a geologic perspective.

If we can be of any further service to you on this or other geologic matters, please do not hesitate to contact us.

Sincerely,

*Adam Simmons*

---

Mr. Adam Simmons  
Certified Engineering Geologist & Hydrogeologist  
State of California PG #6234 EG #2015 HG #509





Aerial photograph of sea bluff showing approximate boundary of the 2001 landslide in red



November 5, 2019

Mr. Peter Levine  
1547 Shoreline Drive  
Santa Barbara, CA 93105

Re: Slope Stability Analysis, 1553 Shoreline Drive, Santa Barbara, CA

Dear Mr. Levine;

Per this firm's contract dated February 25, 2019 and received April 3, 2019; this firm performed a slope stability analysis which is to be used in conjunction with the Geologic Investigation for the development setback from the Coastal Bluff. The development setback is based on the requirements of California Coastal Commission and the recommendations of City of Santa Barbara Planning staff. Recommendations for the development setback are based on our slope analysis and the Geologic Report by Mr. Adam Simmons.

Determination of soil bedrock types below the proposed building site were obtained utilizing a down-hole logging method. The down-hole logging consists of drilling a 24-inch diameter by 50-foot deep boring penetrating into the hard bedrock soils. Down-hole logging was performed by Mr. Simmons. A graphical profile of the materials encountered was produced. A geologic cross-section was developed for our slope analysis. Graphical representation identifying the major geologic units are presented in Enclosure B.

During the drilling operation samples were obtained utilizing a split tube sampler. Samples were then delivered to this firm for laboratory testing. Laboratory testing was performed on the samples collected by Mr. Adam Simmons. Results of the laboratory testing are presented in Enclosure A. Comparison of these shears to the blow counts recorded during the drilling operation were made to verify and correlate the friction angles based on (Kulhawy Mayne 1990) and (Meyerhof 1996).

Per current building code requirements and Coastal Land Use Plan Policy 5.1-67.E, the Factors of Safety must be higher than 1.5 static and 1.1 pseudo-static. Analysis indicates that the estimated failure zone occurs at approximately 44 feet back from the identified top of slope in static conditions. Pseudo-static conditions utilizing a horizontal earthquake factor of 1.5 per the California Geologic Survey Special Publication 117A resulted in a Factor of Safety of 1.2 at the same location.

Based on our analysis the setback as shown is the combination of the estimated slope failure plane and the estimate future erosion of bluff retreat. The result is an estimated setback of 76 feet from the present City of Santa Barbara/Coastal Land Use Plan Policy 5.1-67.B and 5.1-69 Coastal Bluff Edge requirement.

Should you have questions please feel free to call.

Sincerely,  
BRAUN & ASSOCIATES, INC.

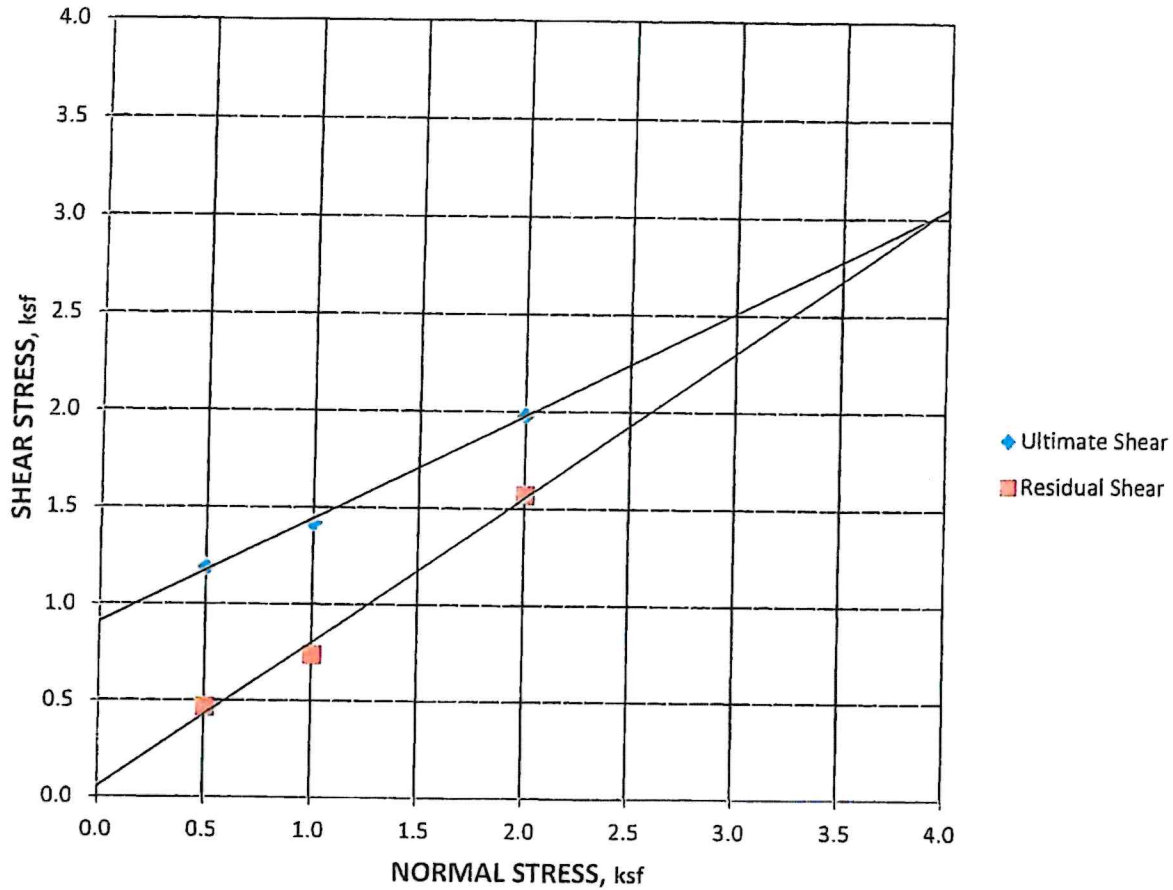
Mark D. Braun, P.E.

MDB/dsr

Soils Engineering & Materials Testing

# Enclosure A

### Direct Shear Test Data



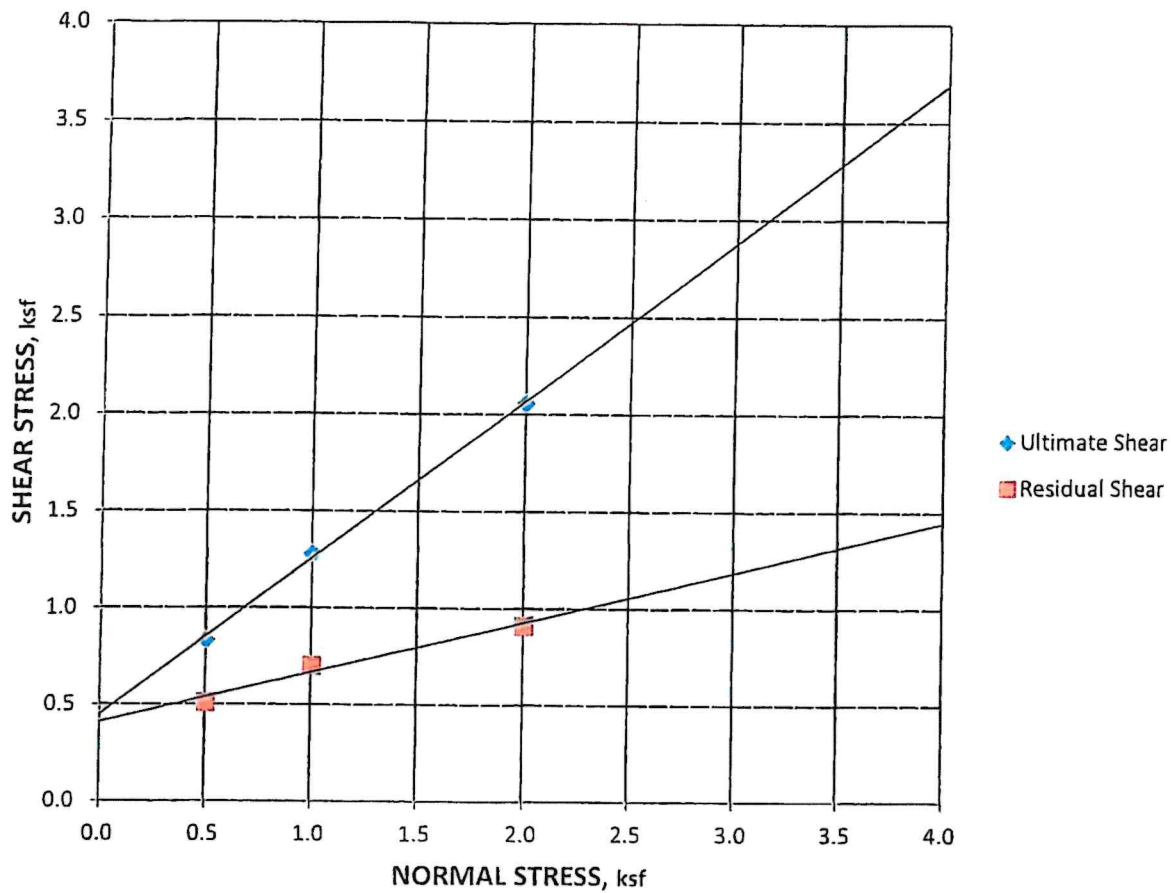
### ARTIFICIAL FILL

Ultimate Effective Cohesion	900 psf
Residual Effective Cohesion	90 psf
Ultimate Effective Angle of Internal Friction	26 deg
Residual Effective Angle of Internal Friction	34 deg
Location	B-1
Depth	10 ft
Moisture Content	15.8 %
Unit Dry Weight	115.1 pcf
Material Description	Brown SILTY fine SAND with CLAY (SM)
Sample Condition	Good

Plate A-7.1



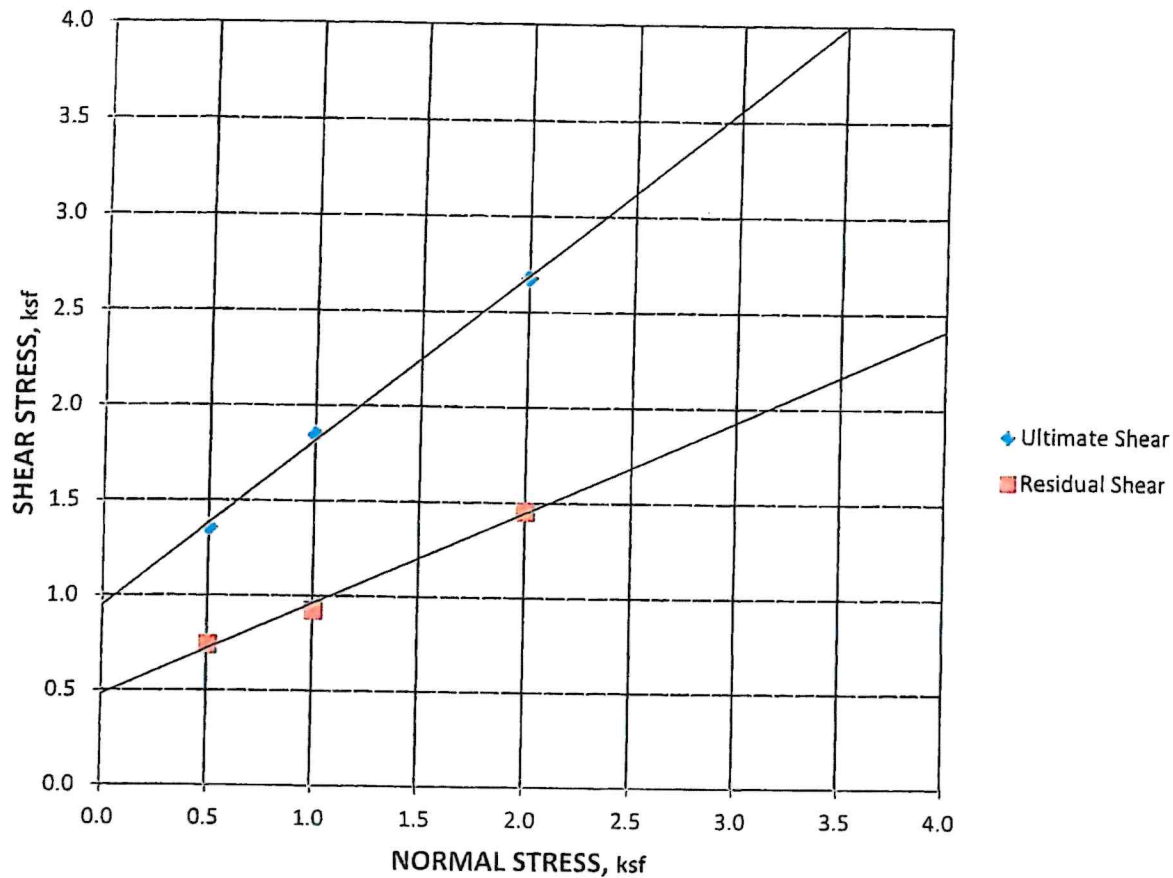
### Direct Shear Test Data



Ultimate Effective Cohesion	450 psf
Residual Effective Cohesion	400 psf
Ultimate Effective Angle of Internal Friction	37 deg
Residual Effective Angle of Internal Friction	13 deg
Location	B-1
Depth	20 ft
Moisture Content	46.4 %
Unit Dry Weight	75.1 pcf
Material Description	Brown SILTY and slight fine SAND (ML)
Sample Condition	Good

Plate A-7.2

### Direct Shear Test Data

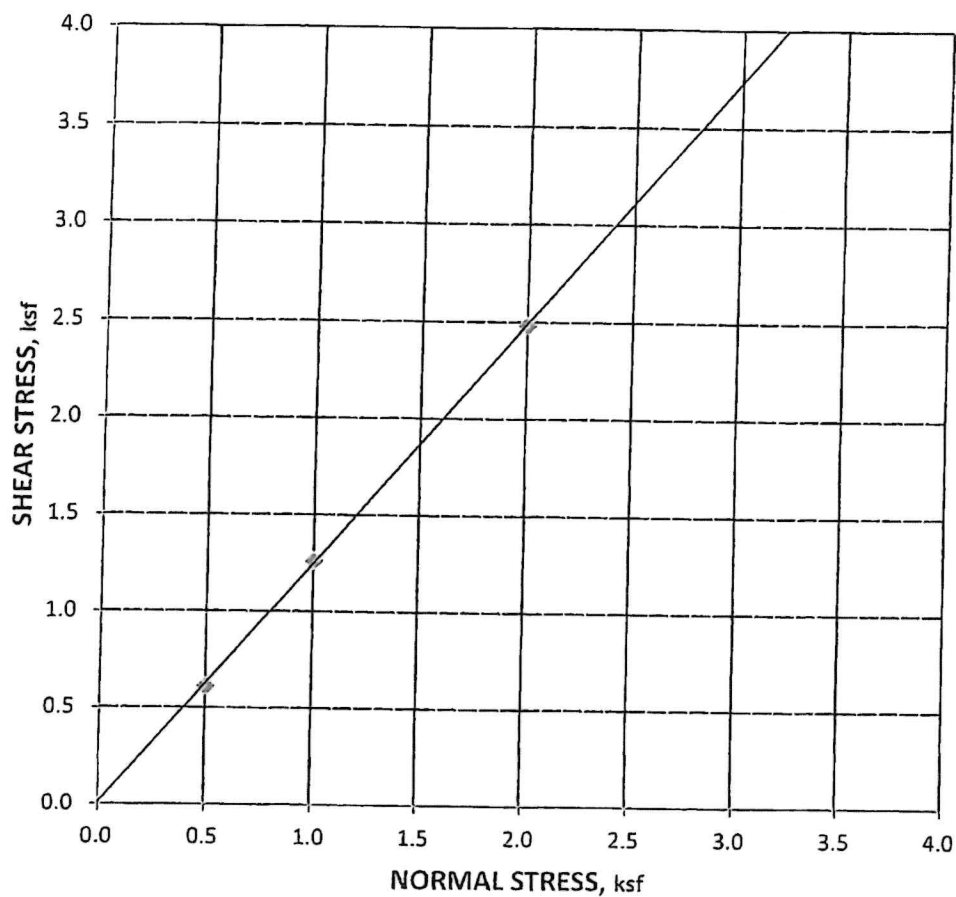


### UPPER MONTEREY FORMATION

Ultimate Effective Cohesion	950 psf
Residual Effective Cohesion	490 psf
Ultimate Effective Angle of Internal Friction	38 deg
Residual Effective Angle of Internal Friction	23 deg
Location	B-1
Depth	31 ft
Moisture Content	42.9 %
Unit Dry Weight	79.3 pcf
Material Description	Brown SILTY and slight fine SAND (ML)
Sample Condition	Good

Plate A-7.3

### Direct Shear Test Data



◆ Ultimate Shear

Ultimate Effective Cohesion

0 psf

Ultimate Effective Angle of Internal Friction

49 deg

Location

B-1

Depth

50 ft

Moisture Content

52.9 %

Unit Dry Weight

64.3 pcf

Material Description

Brown SILTY SHALE (ML)

Sample Condition

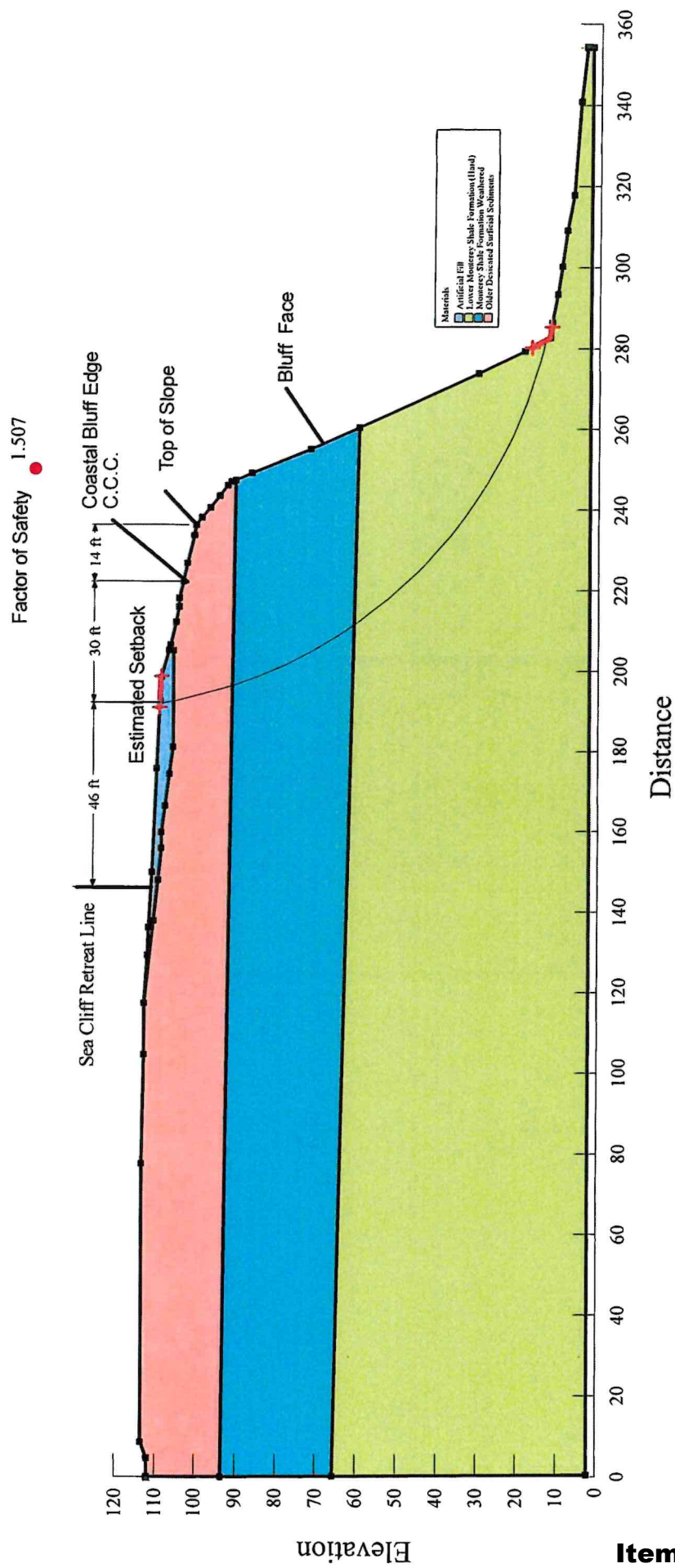
Good

Plate A-7.4

# Enclosure B



# Static Analysis



# Ordinary

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## File Information

File Version: 10.00  
 Created By: Mark Braun  
 Last Edited By: Mark Braun  
 Revision Number: 84  
 Date: 05/22/2019  
 Time: 07:54:51 PM  
 Tool Version: 10.0.0.17401  
 File Name: Static Analysis 1.gsz  
 Directory: \\nas01\shared\My Documents\Work Orders\WO 2997 1553 Shoreline Dr\Slope Analysis\  
 Last Solved Date: 05/22/2019  
 Last Solved Time: 07:54:52 PM

## Project Settings

Unit System: U.S. Customary Units

## Analysis Settings

### Ordinary

Kind: SLOPE/W  
 Method: Ordinary  
 Settings  
   PWP Conditions from: (none)  
   Unit Weight of Water: 62.430189 pcf  
 Slip Surface  
   Direction of movement: Left to Right  
   Use Passive Mode: No  
   Slip Surface Option: Entry and Exit  
   Critical slip surfaces saved: 1  
   Optimize Critical Slip Surface Location: No  
   Tension Crack Option: (none)  
 Distribution  
   F of S Calculation Option: Constant  
 Advanced  
   Geometry Settings  
     Minimum Slip Surface Depth: 0.1 ft  
     Number of Slices: 30  
   Factor of Safety Convergence Settings  
     Maximum Number of Iterations: 100  
     Tolerable difference in F of S: 0.001

## Materials

### Lower Monterey Shale Formation (Hard)

Model: Mohr-Coulomb  
 Unit Weight: 98 pcf  
 Cohesion': 0 psf  
 Phi': 49 °  
 Phi-B: 0 °

### Monterey Shale Formation Weathered

Model: Mohr-Coulomb  
 Unit Weight: 91 pcf  
 Cohesion': 950 psf  
 Phi': 38 °  
 Phi-B: 0 °

### Older Desicated Surficial Sediments

Model: Mohr-Coulomb  
 Unit Weight: 110 pcf  
 Cohesion': 450 psf  
 Phi': 37 °  
 Phi-B: 0 °

### Artificial Fill

Model: Mohr-Coulomb  
 Unit Weight: 120 pcf  
 Cohesion': 90 psf  
 Phi': 34 °  
 Phi-B: 0 °

### Slip Surface Entry and Exit

Left Type: Range  
 Left-Zone Left Coordinate: (191, 109.46094) ft  
 Left-Zone Right Coordinate: (198.78855, 109) ft  
 Left-Zone Increment: 10  
 Right Type: Range  
 Right-Zone Left Coordinate: (280.26206, 17) ft  
 Right-Zone Right Coordinate: (285.5, 12.1025) ft  
 Right-Zone Increment: 10  
 Radius Increments: 5

### Slip Surface Limits

Left Coordinate: (0, 112) ft  
 Right Coordinate: (354.28858, 3.48707) ft

### Points

	X	Y
Point 1	260.3062 ft	59.95267 ft
Point 2	0.11866 ft	65.61979 ft
Point 3	0.38901 ft	2.24842 ft
Point 4	354.28858 ft	2.24842 ft
Point 5	354.28858 ft	3.48707 ft
Point 6	340.90074 ft	4.91898 ft
Point 7	317.88618 ft	6.52988 ft
Point 8	309.18067 ft	8.23946 ft
Point 9	300.22559 ft	9.49238 ft
Point 10	293.41973 ft	10.52157 ft
Point 11	286.34522 ft	11.99822 ft
Point 12	282.71841 ft	12.44569 ft
Point 13	279.31548 ft	18.75504 ft
Point 14	273.76908 ft	30.28682 ft
Point 15	0 ft	93.43333 ft

Point 16	0 ft	112 ft
Point 17	4.59503 ft	112 ft
Point 18	8.54714 ft	113.50462 ft
Point 19	77.42683 ft	113.50462 ft
Point 20	104.52704 ft	112.94039 ft
Point 21	117.32436 ft	112.94039 ft
Point 22	155.79252 ft	108.85835 ft
Point 23	159.78743 ft	108.85835 ft
Point 24	181.06799 ft	105.94083 ft
Point 25	205.03742 ft	105.94083 ft
Point 26	206.31957 ft	106.76697 ft
Point 27	205.13102 ft	107.06392 ft
Point 28	212.03588 ft	105.33879 ft
Point 29	215.78852 ft	104.58874 ft
Point 30	218.04011 ft	104.58874 ft
Point 31	222.09297 ft	103.46365 ft
Point 32	226.74624 ft	102.63859 ft
Point 33	233.65111 ft	100.98847 ft
Point 34	236.17207 ft	100.43688 ft
Point 35	238.06544 ft	99.07688 ft
Point 36	240.43216 ft	96.97774 ft
Point 37	243.39056 ft	94.61252 ft
Point 38	245.96436 ft	92.69077 ft
Point 39	246.85188 ft	91.71511 ft
Point 40	247.254 ft	90.68317 ft
Point 41	129.18744 ft	112.29021 ft
Point 42	137.81544 ft	110.70099 ft
Point 43	147.79572 ft	109.70692 ft
Point 44	198.39848 ft	109.11566 ft
Point 45	175.70991 ft	110.17451 ft
Point 46	149.79993 ft	111.23355 ft
Point 47	135.98362 ft	111.91773 ft
Point 48	249.11638 ft	86.746 ft
Point 49	254.99004 ft	72.07109 ft
Point 50	166.36453 ft	107.95664 ft
Point 51	174.22336 ft	106.87921 ft

## Regions

	Material	Points	Area
Region 1	Lower Monterey Shale Formation (Hard)	1,2,3,4,5,6,7,8,9,10,11,12,13,14	16,852 ft <sup>2</sup>
Region 2	Artificial Fill	41,21,22,23,50,51,24,25,26,44,45,46,47	188.25 ft <sup>2</sup>
Region 3	Monterey Shale Formation Weathered	1,2,15,40,48,49	7,398.7 ft <sup>2</sup>
Region 4	Older Desiccated Surficial Sediments	15,40,39,38,37,36,35,34,33,32,31,30,29,28,26,25,24,51,50,23,22,43,42,21,20,19,18,17,16	4,349 ft <sup>2</sup>

## Slip Results

Slip Surfaces Analysed: 715 of 726 converged

### Current Slip Surface

Slip Surface: 101  
 Factor of Safety: 1.507  
 Volume: 3,750.7723 ft<sup>3</sup>  
 Weight: 364,978.12 lbf  
 Resisting Moment: 40,449,964 lbf·ft  
 Activating Moment: 26,845,893 lbf·ft  
 Slip Rank: 571 of 726 slip surfaces  
 Exit: (282.15546, 13.48946) ft  
 Entry: (191.78049, 109.42451) ft  
 Radius: 117.89983 ft  
 Center: (308.1281, 128.4929) ft

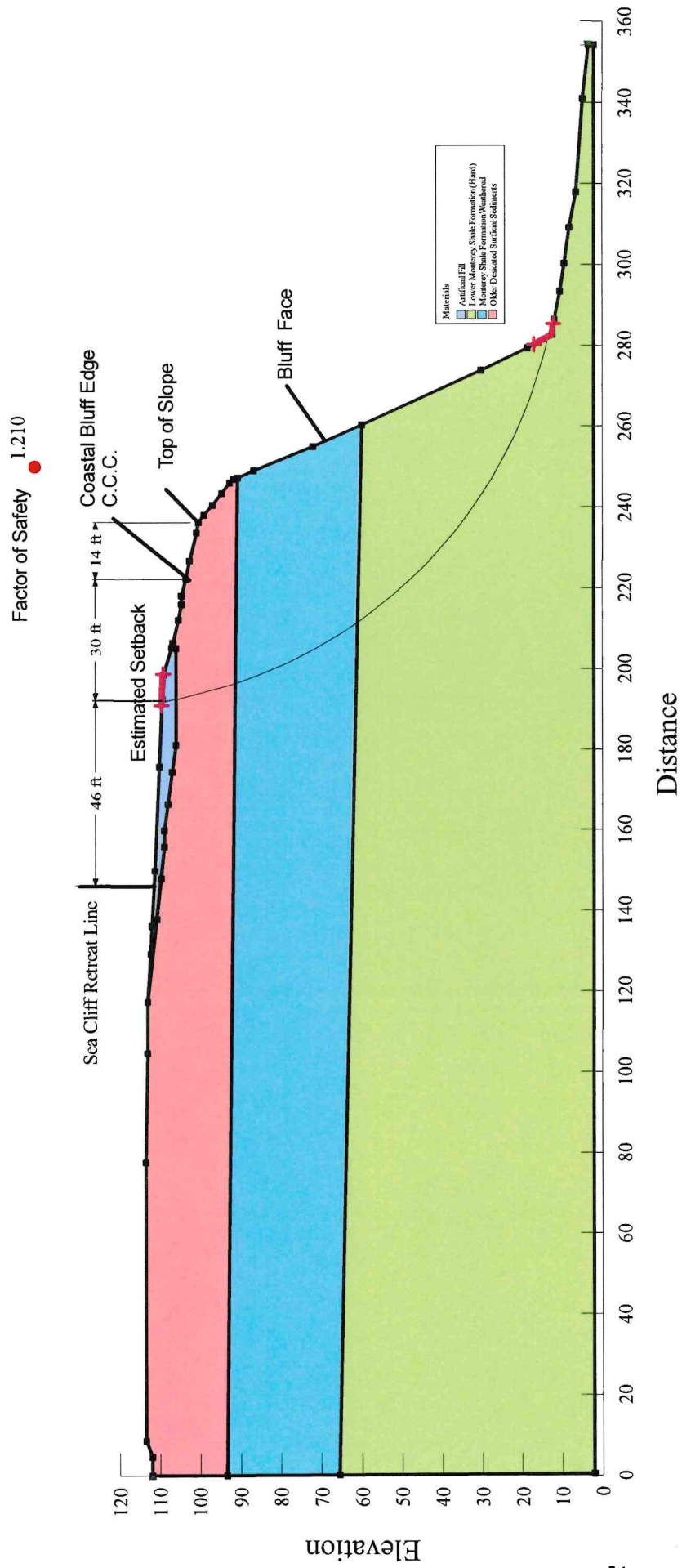
### Slip Slices

	X	Y	PWP	Base Normal Stress	Frictional Strength	Cohesive Strength	Suction Strength	Base Material
Slice 1	192.09288 ft	107.68267 ft	0 psf	6.4589963 psf	4.356648 psf	90 psf	0 psf	Artificial Fill
Slice 2	194.33512 ft	98.595571 ft	0 psf	78.242804 psf	58.960182 psf	450 psf	0 psf	Older Desicated Surficial Sediments
Slice 3	197.33173 ft	88.309021 ft	0 psf	263.97392 psf	206.23903 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Slice 4	200.05822 ft	81.547005 ft	0 psf	447.93988 psf	349.96899 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Slice 5	203.37768 ft	74.505913 ft	0 psf	702.03699 psf	548.49141 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Slice 6	205.67849 ft	70.159638 ft	0 psf	894.84478 psf	699.12937 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Slice 7	207.60127 ft	66.940469 ft	0 psf	1,059.6865 psf	827.91785 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Slice 8	210.16467 ft	62.932045 ft	0 psf	1,293.347 psf	1,010.4734 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Slice 9	211.74113 ft	60.598431 ft	0 psf	1,443.6774 psf	1,660.7609 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 10	213.9122 ft	57.683434 ft	0 psf	1,656.7253 psf	1,905.8444 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 11	216.91431 ft	53.811865 ft	0 psf	1,977.7515 psf	2,275.1429 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 12	220.06654 ft	50.158775 ft	0 psf	2,307.8235 psf	2,654.8472 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 13	223.25629 ft	46.673981 ft	0 psf	2,640.4051 psf	3,037.4386 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)

Slice 14	225.58292 ft	44.326349 ft	0 psf	2,888.2809 psf	3,322.5871 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 15	228.47246 ft	41.602946 ft	0 psf	3,186.9713 psf	3,666.1911 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 16	231.92489 ft	38.557804 ft	0 psf	3,535.1769 psf	4,066.7558 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 17	234.91159 ft	36.096332 ft	0 psf	3,832.433 psf	4,408.7099 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 18	237.11875 ft	34.383198 ft	0 psf	4,015.5959 psf	4,619.4146 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 19	239.2488 ft	32.81696 ft	0 psf	4,126.4538 psf	4,746.9421 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 20	241.91136 ft	30.960771 ft	0 psf	4,245.0011 psf	4,883.3151 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 21	244.67746 ft	29.134688 ft	0 psf	4,364.9223 psf	5,021.2688 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 22	246.40812 ft	28.040213 ft	0 psf	4,423.2066 psf	5,088.3172 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 23	247.05294 ft	27.645793 ft	0 psf	4,405.4616 psf	5,067.9038 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 24	248.18519 ft	26.974194 ft	0 psf	4,338.4825 psf	4,990.8532 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 25	250.58479 ft	25.60312 ft	0 psf	4,168.2982 psf	4,795.0786 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 26	253.52162 ft	24.014399 ft	0 psf	3,895.4829 psf	4,481.2404 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 27	256.31908 ft	22.596697 ft	0 psf	3,621.6907 psf	4,166.2786 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 28	258.97716 ft	21.336862 ft	0 psf	3,354.4869 psf	3,858.8957 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 29	261.98906 ft	20.0115 ft	0 psf	3,006.8956 psf	3,459.0377 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 30	265.35478 ft	18.640494 ft	0 psf	2,568.9029 psf	2,955.1847 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 31	268.7205 ft	17.388345 ft	0 psf	2,091.1895 psf	2,405.6383 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 32	272.08622 ft	16.251071 ft	0 psf	1,576.369 psf	1,813.4051 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 33	275.15568 ft	15.306756 ft	0 psf	1,092.7816 psf	1,257.1014 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)

Slice 34	277.92888 ft	14.535369 ft	0 psf	650.38185 psf	748.17873 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Slice 35	280.73547 ft	13.828687 ft	0 psf	212.63402 psf	244.60746 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)

# PseudoStatic Analysis





# Ordinary

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## File Information

File Version: 11.05  
Created By: Mark Braun  
Last Edited By: Mark Braun  
Revision Number: 96  
Date: 11/06/2023  
Time: 07:45:37 AM  
Tool Version: 23.1.2.11  
File Name: PseudoStatic Analysis 11-6-23.gsz  
Directory: \\nas01\shared\My Documents\Work Orders\WO 2997 1553 Shoreline Dr\Slope Analysis\  
Last Solved Date: 11/06/2023  
Last Solved Time: 07:45:38 AM

## Project Settings

Unit System: U.S. Customary Units

## Analysis Settings

### Ordinary

Kind: SLOPE/W  
Analysis Type: Ordinary  
Settings  
    PWP Conditions from: (none)  
    Unit Weight of Water: 62.430189 pcf  
Slip Surface  
    Direction of movement: Left to Right  
    Use Passive Mode: No  
    Slip Surface Option: Entry and Exit  
    Critical slip surfaces saved: 1  
    Optimize Critical Slip Surface Location: No  
    Tension Crack Option: (none)  
Distribution  
    F of S Calculation Option: Constant  
Convergence

- Geometry Settings
  - Minimum Slip Surface Depth: 0.1 ft
  - Number of Columns: 30
- Factor of Safety Convergence Settings
  - Maximum Number of Iterations: 100
  - Tolerable difference in F of S: 0.001

Materials

Lower Monterey Shale Formation (Hard)

- Slope Stability Material Model: Mohr-Coulomb
- Unit Weight: 98 pcf
- Effective Cohesion: 0 psf
- Effective Friction Angle: 49 °
- Phi-B: 0 °

Monterey Shale Formation Weathered

- Slope Stability Material Model: Mohr-Coulomb
- Unit Weight: 91 pcf
- Effective Cohesion: 950 psf
- Effective Friction Angle: 38 °
- Phi-B: 0 °

Older Desicated Surficial Sediments

- Slope Stability Material Model: Mohr-Coulomb
- Unit Weight: 110 pcf
- Effective Cohesion: 450 psf
- Effective Friction Angle: 37 °
- Phi-B: 0 °

Artificial Fill

- Slope Stability Material Model: Mohr-Coulomb
- Unit Weight: 120 pcf
- Effective Cohesion: 90 psf
- Effective Friction Angle: 34 °
- Phi-B: 0 °

Slip Surface Entry and Exit

- Left Type: Range
- Left-Zone Left Coordinate: (191, 109.46094) ft

inary

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Left-Zone Right Coordinate: (198.78855, 109) ft  
Left-Zone Increment: 10  
Right Type: Range  
Right-Zone Left Coordinate: (280.26206, 17) ft  
Right-Zone Right Coordinate: (285.5, 12.1025) ft  
Right-Zone Increment: 10  
Radius Increments: 5

Slip Surface Limits

Left Coordinate: (0, 112) ft  
Right Coordinate: (354.28858, 3.48707) ft

Seismic Coefficients

Horz Seismic Coef.: 0.15  
Vert Seismic Coef.: 0.15

Geometry

Name: Default Geometry

Settings

View: 2D  
Element Thickness: 1 ft

Points

	X	Y
Point 1	260.3062 ft	59.95267 ft
Point 2	0.11866 ft	65.61979 ft
Point 3	0.38901 ft	2.24842 ft
Point 4	354.28858 ft	2.24842 ft
Point 5	354.28858 ft	3.48707 ft
Point 6	340.90074 ft	4.91898 ft
Point 7	317.88618 ft	6.52988 ft
Point 8	309.18067 ft	8.23946 ft
Point 9	300.22559 ft	9.49238 ft
Point 10	293.41973 ft	10.52157 ft
Point 11	286.34522 ft	11.99822 ft
Point 12	282.71841 ft	12.44569 ft

inary

file:///nas01/shared/My%20Documents/Work%20Orders/WO%202997%20%201553%20S

Point 13	279.31548 ft	18.75504 ft
Point 14	273.76908 ft	30.28682 ft
Point 15	0 ft	93.43333 ft
Point 16	0 ft	112 ft
Point 17	4.59503 ft	112 ft
Point 18	8.54714 ft	113.50462 ft
Point 19	77.42683 ft	113.50462 ft
Point 20	104.52704 ft	112.94039 ft
Point 21	117.32436 ft	112.94039 ft
Point 22	155.79252 ft	108.85835 ft
Point 23	159.78743 ft	108.85835 ft
Point 24	181.06799 ft	105.94083 ft
Point 25	205.03742 ft	105.94083 ft
Point 26	206.31957 ft	106.76697 ft
Point 27	205.13102 ft	107.06392 ft
Point 28	212.03588 ft	105.33879 ft
Point 29	215.78852 ft	104.58874 ft
Point 30	218.04011 ft	104.58874 ft
Point 31	222.09297 ft	103.46365 ft
Point 32	226.74624 ft	102.63859 ft
Point 33	233.65111 ft	100.98847 ft
Point 34	236.17207 ft	100.43688 ft
Point 35	238.06544 ft	99.07688 ft
Point 36	240.43216 ft	96.97774 ft
Point 37	243.39056 ft	94.61252 ft
Point 38	245.96436 ft	92.69077 ft
Point 39	246.85188 ft	91.71511 ft
Point 40	247.254 ft	90.68317 ft
Point 41	129.18744 ft	112.29021 ft
Point 42	137.81544 ft	110.70099 ft
Point 43	147.79572 ft	109.70692 ft
Point 44	198.39848 ft	109.11566 ft
Point 45	175.70991 ft	110.17451 ft
Point 46	149.79993 ft	111.23355 ft
Point 47	135.98362 ft	111.91773 ft
Point 48	249.11638 ft	86.746 ft
Point 49	254.99004 ft	72.07109 ft
Point 50	166.36453 ft	107.95664 ft

7

11/6/2023, 7:46

inary

file:///nas01/shared/My%20Documents/Work%20Orders/WO%202997%20%201553%20S

Point 51	174.22336 ft	106.87921 ft
Point 52	192.5 ft	109.39094 ft

Regions

	Material	Points	Area
Region 1	Lower Monterey Shale Formation (Hard)	1,2,3,4,5,6,7,8,9,10,11,12,13,14	16,852 ft²
Region 2	Artificial Fill	41,21,22,23,50,51,24,25,26,44,52,45,46,47	188.25 ft²
Region 3	Monterey Shale Formation Weathered	1,2,15,40,48,49	7,398.7 ft²
Region 4	Older Desicated Surficial Sediments	15,40,39,38,37,36,35,34,33,32,31,30,29,28,26,25,24,51,50,23,22,43,42,21,20,19,18,17,16	4,349 ft²

Slip Results

Slip Surfaces Analysed: 715 of 726 converged

Current Slip Surface

Slip Surface: 101  
Factor of Safety: 1.210  
Volume: 3,751.0042 ft³  
Weight: 365,003.62 lbf  
Resisting Moment: 41,513,056 lbf-ft  
Activating Moment: 34,309,942 lbf-ft  
Slip Rank: 571 of 726 slip surfaces  
Exit: (282.15546, 13.48946) ft  
Entry: (191.78049, 109.42452) ft  
Radius: 117.89984 ft  
Center: (308.12811, 128.49291) ft

Slip Columns

	X	Y	PWP	Base Normal Stress	Frictional Strength	Cohesive Strength	Suction Strength	Base Material
Column 1	192.09288 ft	107.68267 ft	0 psf	2.0256666 psf	1.3663294 psf	90 psf	0 psf	Artificial Fill
Column 2	192.45263 ft	105.70044 ft	0 psf	6.4027305 psf	4.8248035 psf	450 psf	0 psf	Older Desicated Surficial Sediments
Column 3	194.38249 ft	98.35518 ft	0 psf	47.411669 psf	35.727255 psf	450 psf	0 psf	Older Desicated Surficial Sediments



Column 4	197.33173 ft	88.30902 ft	0 psf	194.39432 psf	151.87749 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Column 5	200.05822 ft	81.54701 ft	0 psf	360.45652 psf	281.6195 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Column 6	203.37768 ft	74.50592 ft	0 psf	603.01913 psf	471.13018 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Column 7	205.67849 ft	70.15964 ft	0 psf	793.33154 psf	619.81853 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Column 8	207.60127 ft	66.94047 ft	0 psf	959.03896 psf	749.28336 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Column 9	210.16467 ft	62.93205 ft	0 psf	1,197.4641 psf	935.56149 psf	950 psf	0 psf	Monterey Shale Formation Weathered
Column 10	211.74113 ft	60.59843 ft	0 psf	1,352.7996 psf	1,556.2179 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 11	213.91220 ft	57.68344 ft	0 psf	1,574.5792 psf	1,811.3462 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 12	216.91431 ft	53.81187 ft	0 psf	1,912.0766 psf	2,199.5926 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 13	220.06654 ft	50.15878 ft	0 psf	2,264.8358 psf	2,605.3956 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 14	223.25629 ft	46.67398 ft	0 psf	2,625.6267 psf	3,020.438 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 15	225.58292 ft	44.32635 ft	0 psf	2,896.6266 psf	3,332.1877 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 16	228.47246 ft	41.60295 ft	0 psf	3,226.7723 psf	3,711.977 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 17	231.92489 ft	38.55781 ft	0 psf	3,616.1427 psf	4,159.8964 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 18	234.91159 ft	36.09633 ft	0 psf	3,951.7655 psf	4,545.9862 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 19	237.11875 ft	34.38320 ft	0 psf	4,163.447 psf	4,789.4979 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 20	239.24880 ft	32.81696 ft	0 psf	4,299.8122 psf	4,946.3682 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 21	241.91136 ft	30.96077 ft	0 psf	4,449.447 psf	5,118.5033 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 22	244.67746 ft	29.13469 ft	0 psf	4,601.5413 psf	5,293.4677 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 23	246.40812 ft	28.04021 ft	0 psf	4,679.0324 psf	5,382.611 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)

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Column 24	247.05294 ft	27.64579 ft	0 psf	4,666.0743 psf	5,367.7044 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 25	248.18519 ft	26.97420 ft	0 psf	4,604.9984 psf	5,297.4447 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 26	250.58479 ft	25.60312 ft	0 psf	4,443.8612 psf	5,112.0775 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 27	253.52162 ft	24.01440 ft	0 psf	4,174.4045 psf	4,802.1031 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 28	256.31908 ft	22.59670 ft	0 psf	3,899.1608 psf	4,485.4714 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 29	258.97716 ft	21.33686 ft	0 psf	3,626.8614 psf	4,172.2268 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 30	261.98906 ft	20.01150 ft	0 psf	3,266.097 psf	3,757.2148 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 31	265.35478 ft	18.64049 ft	0 psf	2,804.1998 psf	3,225.8628 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 32	268.72050 ft	17.38835 ft	0 psf	2,293.6094 psf	2,638.4958 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 33	272.08622 ft	16.25107 ft	0 psf	1,736.8962 psf	1,998.0706 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 34	275.15568 ft	15.30676 ft	0 psf	1,208.9478 psf	1,390.7354 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 35	277.92888 ft	14.53537 ft	0 psf	722.086 psf	830.66492 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)
Column 36	280.73547 ft	13.82869 ft	0 psf	236.90955 psf	272.53326 psf	0 psf	0 psf	Lower Monterey Shale Formation (Hard)

Project No.  
**23866.000.002**

November 28, 2023

Ms. Julia Pujo  
City of Santa Barbara  
P.O. Box 1990  
Santa Barbara, CA 93102

Subject: Proposed New Residence  
1553 Shoreline Drive  
Santa Barbara, California  
APN: 045-173-043

## UPDATED GEOTECHNICAL PEER REVIEW

- References:
- 1) Adam Simmons – Consulting Geologist, November 1, 2023, Updated Geologic Investigation – Sea Cliff Study, Proposed Single Family Residence, 1553 Shoreline Drive, Santa Barbara, California.
  - 2) Adam Simmons – Consulting Geologist, May 7, 2020, Preliminary Geologic Investigation – Updated, New Coastal Residential Project, 1553 Shoreline Drive, Santa Barbara, California, APN 045-173-043
  - 3) Braun & Associates, Inc., November 5, 2019, Slope Stability Analysis, 1553 Shoreline Drive, Santa Barbara, CA
  - 4) Thomas Ochsner AIA Architect 26-sheet Architectural Plan Set dated October 3, 2023
  - 5) Santa Barbara Coastal Land Use Plan, Chapter 5.1 - Coastal Hazards


Dear Ms. Pujo:

We have reviewed the Updated Geologic Investigation – Sea Cliff Study dated November 1, 2023, prepared by Adam Simmons - Consulting Geologist; and the Slope Stability Analysis dated November 5, 2019, prepared by Braun & Associates, which was modified to include the results of seismic stability analyses requested in our October 18, 2023, Geotechnical Peer Review letter. Both of the referenced letters address the concerns discussed in our letter.

Based on our review of the referenced documents, we find that the proposed improvements at 1553 Shoreline Drive in Santa Barbara, California, are in conformance with the requirements of the City of Santa Barbara's Local Coastal Plan (LCP), specifically Section 5.1 – Coastal Hazards (including Section 5.1-70 – Coastal Bluff Edge Development Buffer Calculation), the California Coastal Commission (CCC) accepted standards, and the applicable California Building Code (CBC).

We appreciate the opportunity to be of assistance. If you have any questions or comments regarding this letter, please feel free to contact us.

Sincerely,  
ENGEO Incorporated



Walter Crampton, PE, GE, D.CE  
wfc/jg