

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

A. Introduction

Within the City of Solana Beach, there are three primary types of natural hazards including hillside-related geologic hazards, flooding hazards, and fire hazards. Hillside-related geologic hazards occur in the City due to the presence of steep slopes and coastal bluffs and are shown in Exhibits 4-1 – 4-5. Flood hazard areas in the City are related to the existence of the 100-year flood plain and are shown in Exhibit 4-6. Fire hazards in the City are related to the presence of a WUI which exists in much of the northern part of the City as shown in Exhibit 4-7. Policies related to each of these natural hazard areas are included in the LUP.

Over the past half-century, human actions have been the major influence affecting the City and the shoreline. Through urban development activities, including water reservoir and dam building, road building, residential and commercial development on coastal hillsides, flood control systems, and sand mining, natural sediment transport to the beach has been hindered or eliminated. All major coastal rivers in the region have at least one dam and reservoir and are bisected by at least one major roadway. Much of the sediment-laden fresh water that would naturally flow to coastal wetlands is diverted to farms and city water distribution systems. Dams and roads reduce the size of flood flows and thus reduce the flushing of sediment from estuaries, trapping the sand that would otherwise nourish coastal beaches.

Beach sand is a product of the weathering of the land. The primary natural source for the region's beaches is sediment carried from inland areas by rivers and streams. Coastal bluff erosion is another source of beach sand. Offshore sand supplies (relic or ancient beaches) may be a natural source of beach sand, but these resources are an under-examined component of the littoral sand budget. Beach sand is the primary buffer protecting sea cliffs and coastal development from erosion and storm damage. To offset the loss of natural sand sources no longer reaching the shoreline, previous projects have built man-made beaches by conducting beach nourishment projects. Most of the sand for this purpose has come from offshore borrow sites, as well as, harbor dredging projects in San Diego Bay and in Oceanside Harbor.

The natural sand cycle of sand movement is a seasonal process. For the San Diego region, beach sand loss typically occurs in the winter due to large storms and waves, followed by a period of sand gain during the summer's gentler storms and surf. During the winter, sand shifts from the beach above the mean sea level to offshore covered by seawater. These combined seasonal processes, including both winter and summer sand shifts, comprise a complete sedimentation cycle. A coastal segment that contains a complete sedimentation cycle is defined as a littoral cell. Along the San Diego region's coast, there are three littoral cells that cycle sand on and off the beaches and along shore in a zigzag pattern. Bounded on one side by the landward limit of the beach and extending seaward beyond the area of breaking waves (beyond the depth of closure), a littoral cell is the region where wave energy dissipates.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Littoral cells are physically interconnected; occurrences in one part of a littoral cell will ultimately have an impact on other parts. There are three littoral zones off the San Diego region including the Oceanside Littoral Cell, the Mission Bay Littoral Cell, and the Silver Strand Littoral Cell.

Solana Beach is located within the southern half of the Oceanside Littoral Cell. Other than the San Elijo Lagoon this portion of the littoral cell, it does not have any major river, stream, or other resources that continually or directly provide a sand supply to the beach. Sediment flowing through the lagoon is blocked by at least three transportation corridors, including I-5, the NCTD berm, and Highway 101. Thus, the City's beaches are experiencing a net loss of sand. The reach from southern Oceanside to northern Del Mar is dependent on longshore transport of sand from the north and south. Longshore sand transport is driven by waves breaking at an angle to the shoreline. Transport is generally southward in winter and northward in summer. Sand also moves onshore and offshore seasonally. Under the present conditions of sand starvation, the small contribution from cliff erosion in Solana Beach gets immediately swept away. Seacliff erosion is a natural process occurring throughout San Diego County generally and in Solana Beach specifically, which in the last several decades has been greatly accelerated by a variety of factors including the El Nino storms of 1997-1998. Armoring of the shoreline, sea level rise, the lack of sand replenishment due to the damming of and mining in coastal rivers that formerly carried to the ocean much greater amounts of sediment than are currently being delivered.

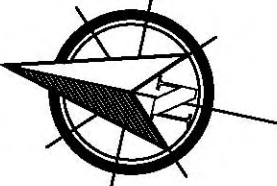
Throughout much of Solana Beach, horizontally-bedded clean sand beach deposits exist within the lower part of the coastal bluffs. The clean sand layer exposed within the coastal bluffs in Solana Beach, typically between elevation 25 feet and 35 feet (MSL), cannot stand vertical. Once exposed, tends to continually erode and slough undermining the overlying lightly cemented dune sands triggering additional failures higher up on the bluff face. Wherever these clean sands are exposed by a cliff failure, the bluff becomes unstable, and susceptible to additional accelerated failure. Ongoing and progressive upper-bluff failures continue to this day along the Solana Beach coastline. Overlying the beach sands are thick sand dune deposits, which comprise much of the middle Bay Point Formation in this area and likely part of a dune field that overran the beach deposits after the sea retreated. These clean relic beach sands have not been encountered in other Bay Point Formation exposures extending from the Point Loma Peninsula in central San Diego, up to the northerly limits of San Diego County.

It is this relatively unstable geologic environment that has necessitated shoreline stabilization along much of the City's coastline north of Fletcher Cove. The clean sand lens instability has prompted the City of Solana Beach to adopt "Preferred Bluff Stabilization Measures (LUP Appendix B)." Seacliff erosion is the primary reason why shoreline protection management remains a critical issue in Solana Beach.



NOTES:

1. These sheets are for preliminary design purposes only and are based upon the August 2009 orthophoto and topographic data. The top of bluff determination does not differentiate between artificially created bluff tops (fill, reconstruction, etc.) and naturally occurring bluff tops.
2. The actual top of bluff will be determined in the field by the applicant's geotechnical consultant and the City of Solana Beach's geotechnical consultant at the time of permit application. The applicant's civil engineer shall survey the determined top of bluff and place it on the project drawings.
3. The top of bluff shown hereon was determined by visual analysis of the orthophoto and the topography data. The topographic data shown hereon is not survey accurate and shall not be relied upon for final engineering. The top of bluff determination may not always correspond to the topographic contours shown. Final determination of the top of bluff shall be based on note #2 above.




1"=50'

- = TOP OF BLUFF
- = 25' SETBACK
- = 40' SETBACK
- =GSL (APPROX.)

GSL - GEOLOGIC SETBACK LINE; ACTUAL GEOLOGIC SETBACK LINE TO BE DETERMINED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN POLICY SECTION 4.25 OF THE CITY OF SOLANA BEACH LUP.

EXHIBIT 4-1 COASTAL BLUFF TOPOGRAPHY, APPROXIMATE BLUFF EDGE AND SETBACKS - NORTH END OF CITY

Adopted Local Coastal Program Land Use Plan
City of Solana Beach, February 2013



CHANGE NO.	DESCRIPTION	APPROVED	DATE	BENCHMARK	SCALE	DESIGNED BY: SN	DRAWN BY: SN	CHECKED BY: JK	ENGINEERING DEPARTMENT APPROVALS	CITY OF SOLANA BEACH	DRAWING NO.
	DESCRIPTION: LOCATION: RECORD FROM: ELEVATION: DATUM: NAVD88				HORIZONTAL: 1" = 50' VERTICAL: N/A	JAMES KNOWLTON			RECOMMENDED: DATE	APPROVED: DATE	ESTIMATED TOP OF COASTAL BLUFF, 25' SETBACK, 40' SETBACK, AND APPROXIMATE GEOLOGIC SETBACK LINE
SHEET 1 OF 5											



NOTES:

1. These sheets are for preliminary design purposes only and are based upon the August 2009 orthophoto and topographic data. The top of bluff determination does not differentiate between artificially created bluff tops (fill, reconstruction, etc.) and naturally occurring bluff tops.
2. The actual top of bluff will be determined in the field by the applicant's geotechnical consultant and the City of Solana Beach's geotechnical consultant at the time of permit application. The applicant's civil engineer shall survey the determined top of bluff and place it on the project drawings.
3. The top of bluff shown hereon was determined by visual analysis of the orthophoto and the topography data. The topographic data shown hereon is not survey accurate and shall not be relied upon for final engineering. The top of bluff determination may not always correspond to the topographic contours shown. Final determination of the top of bluff shall be based on note #2 above.

**337 PACIFIC AVE.
SMALLEST FRONT AND REAR
SETBACK TO TOP OF BLUFF**

**261 PACIFIC AVE.
AVERAGE FRONT AND REAR
SETBACK TO TOP OF BLUFF**

1"=50'

- = TOP OF BLUFF
- = 25' SETBACK
- = 40' SETBACK
- =GSL (APPROX.)

GSL - GEOLOGIC SETBACK LINE; ACTUAL GEOLOGIC SETBACK LINE TO BE DETERMINED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN POLICY SECTION 4.25 OF THE CITY OF SOLANA BEACH LUP.

**EXHIBIT 4-2 COASTAL BLUFF TOPOGRAPHY,
APPROXIMATE BLUFF EDGE AND SETBACKS
- NORTH END OF FLETCHER COVE PARK**

Adopted Local Coastal Program Land Use Plan
City of Solana Beach, February 2013

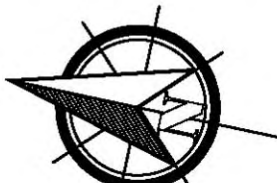
CHANGE NO.	DESCRIPTION	APPROVED	DATE	BENCHMARK	SCALE	DESIGNED BY: SN	DRAWN BY: SN	CHECKED BY: JK	ENGINEERING DEPARTMENT APPROVALS	CITY OF SOLANA BEACH	DRAWING NO.
	DESCRIPTION: LOCATION: RECORD FROM: ELEVATION: DATUM: NAVD88				HORIZONTAL: 1" = 50' VERTICAL: N/A				RECOMMENDED: _____ APPROVED: _____ DATE: _____ DATE: _____	ESTIMATED TOP OF COASTAL BLUFF, 25' SETBACK, 40' SETBACK, AND APPROXIMATE GEOLOGIC SETBACK LINE	SHEET 2 OF 5



NOTES:

1. These sheets are for preliminary design purposes only and are based upon the August 2009 orthophoto and topographic data. The top of bluff determination does not differentiate between artificially created bluff tops (fill, reconstruction, etc.) and naturally occurring bluff tops.
2. The actual top of bluff will be determined in the field by the applicant's geotechnical consultant and the City of Solana Beach's geotechnical consultant at the time of permit application. The applicant's civil engineer shall survey the determined top of bluff and place it on the project drawings.
3. The top of bluff shown hereon was determined by visual analysis of the orthophoto and the topography data. The topographic data shown hereon is not survey accurate and shall not be relied upon for final engineering. The top of bluff determination may not always correspond to the topographic contours shown. Final determination of the top of bluff shall be based on note #2 above.

**197 PACIFIC AVE.
LARGEST FRONT AND REAR
SETBACK TO TOP OF BLUFF**



 — = TOP OF BLUFF

 — = 25' SETBACK

 — = 40' SETBACK

 — = GSL (APPROX.)

1"=50'
 GSL - GEOLOGIC SETBACK LINE; ACTUAL GEOLOGIC SETBACK LINE TO BE DETERMINED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN POLICY SECTION 4.25 OF THE CITY OF SOLANA BEACH LUP.

**EXHIBIT 4-3 COASTAL BLUFF TOPOGRAPHY,
APPROXIMATE BLUFF EDGE AND SETBACKS
- FLETCHER COVE PARK AND ADJACENT PROPERTY**

Adopted Local Coastal Program Land Use Plan
City of Solana Beach, February 2013

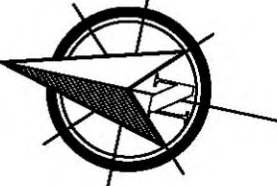


CHANGE NO.	DESCRIPTION	APPROVED	DATE	BENCHMARK	SCALE	DESIGNED BY: SN	DRAWN BY: SN	CHECKED BY: JK	ENGINEERING DEPARTMENT APPROVALS		CITY OF SOLANA BEACH	DRAWING NO.
	DESCRIPTION: LOCATION: RECORD FROM: ELEVATION: DATUM: NAVD88				HORIZONTAL: 1" = 50' VERTICAL: N/A				PLANS PREPARED UNDER SUPERVISION OF	RECOMMENDED: _____ APPROVED: _____	ESTIMATED TOP OF COASTAL BLUFF, 25' SETBACK, 40' SETBACK, AND APPROXIMATE GEOLOGIC SETBACK LINE	SHEET 3 OF 5
								JAMES KNOWLTON	DATE: _____ R.C.E. NO.: _____ EXP.: _____	DATE: _____ DATE: _____		



NOTES:

1. These sheets are for preliminary design purposes only and are based upon the August 2009 orthophoto and topographic data. The top of bluff determination does not differentiate between artificially created bluff tops (fill, reconstruction, etc.) and naturally occurring bluff tops.
2. The actual top of bluff will be determined in the field by the applicant's geotechnical consultant and the City of Solana Beach's geotechnical consultant at the time of permit application. The applicant's civil engineer shall survey the determined top of bluff and place it on the project drawings.
3. The top of bluff shown hereon was determined by visual analysis of the orthophoto and the topography data. The topographic data shown hereon is not survey accurate and shall not be relied upon for final engineering. The top of bluff determination may not always correspond to the topographic contours shown. Final determination of the top of bluff shall be based on note #2 above.



1"=50'

- = TOP OF BLUFF
- = 25' SETBACK
- = 40' SETBACK
- =GSL (APPROX.)

GSL - GEOLOGIC SETBACK LINE; ACTUAL GEOLOGIC SETBACK LINE TO BE DETERMINED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN POLICY SECTION 4.25 OF THE CITY OF SOLANA BEACH LUP.

EXHIBIT 4-4 COASTAL BLUFF TOPOGRAPHY, APPROXIMATE BLUFF EDGE AND SETBACKS - SOUTH OF FLETCHER COVE PARK

Adopted Local Coastal Program Land Use Plan
City of Solana Beach, February 2013

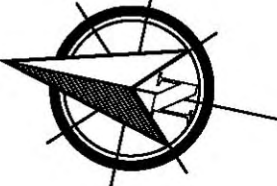


CHANGE NO.	DESCRIPTION	APPROVED	DATE	BENCHMARK	SCALE	DESIGNED BY: SN	DRAWN BY: SN	CHECKED BY: JK	ENGINEERING DEPARTMENT APPROVALS		CITY OF SOLANA BEACH	DRAWING NO.	
	DESCRIPTION: LOCATION: RECORD FROM: ELEVATION: DATUM: NAVD88				HORIZONTAL: 1" = 50' VERTICAL: N/A				PLANS PREPARED UNDER SUPERVISION OF DATE: R.C.E. NO.: EXP.:	RECOMMENDED: DATE	APPROVED: DATE	ESTIMATED TOP OF COASTAL BLUFF, 25' SETBACK, 40' SETBACK, AND APPROXIMATE GEOLOGIC SETBACK LINE	SHEET 4 OF 5



NOTES:

1. These sheets are for preliminary design purposes only and are based upon the August 2009 orthophoto and topographic data. The top of bluff determination does not differentiate between artificially created bluff tops (fill, reconstruction, etc.) and naturally occurring bluff tops.
2. The actual top of bluff will be determined in the field by the applicant's geotechnical consultant and the City of Solana Beach's geotechnical consultant at the time of permit application. The applicant's civil engineer shall survey the determined top of bluff and place it on the project drawings.
3. The top of bluff shown hereon was determined by visual analysis of the orthophoto and the topography data. The topographic data shown hereon is not survey accurate and shall not be relied upon for final engineering. The top of bluff determination may not always correspond to the topographic contours shown. Final determination of the top of bluff shall be based on note #2 above.



— = TOP OF BLUFF

— = 25' SETBACK

— = 40' SETBACK

— = GSL (APPROX.)

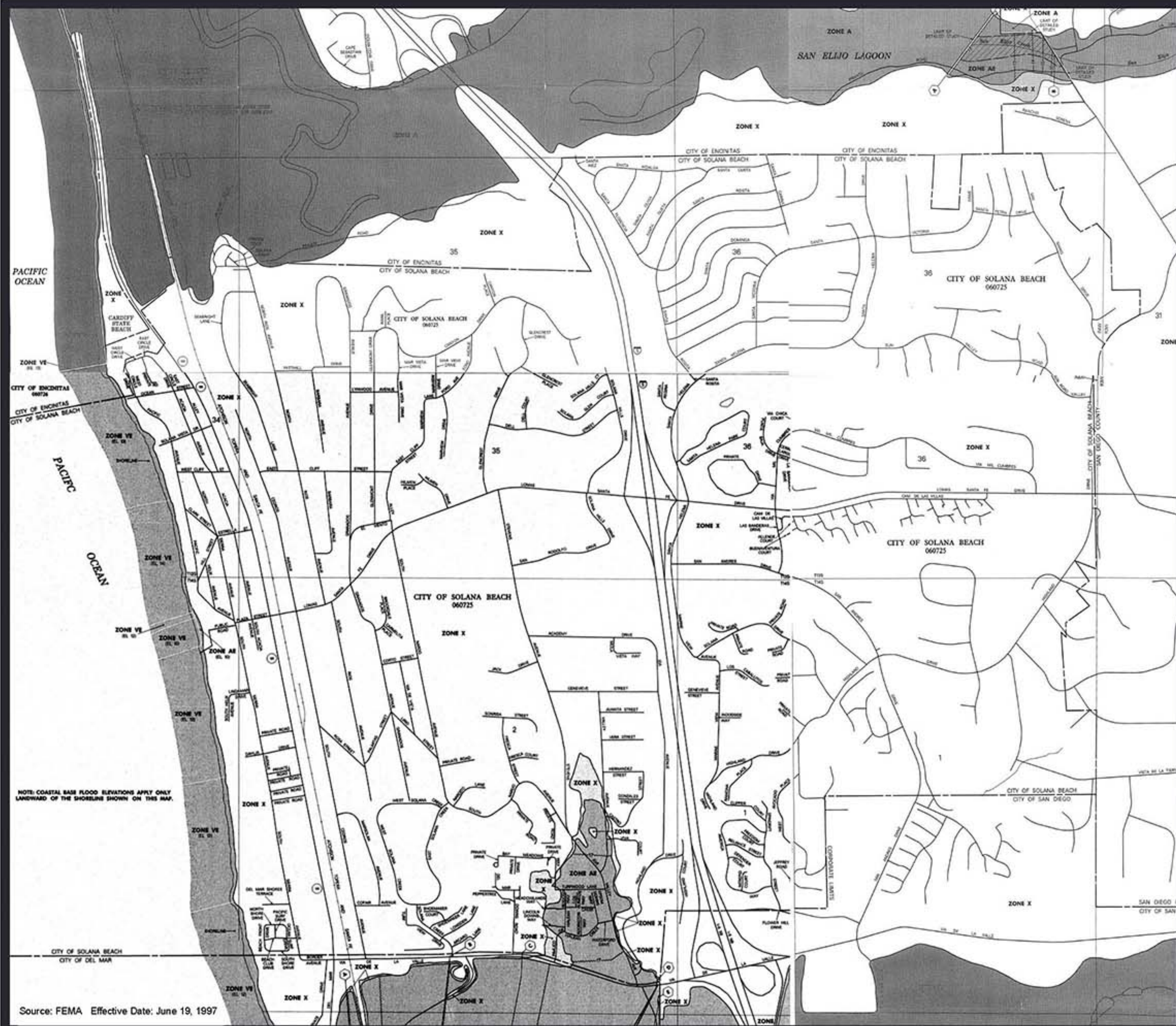
1"=50'
 GSL - GEOLOGIC SETBACK LINE; ACTUAL GEOLOGIC SETBACK LINE TO BE DETERMINED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN POLICY SECTION 4.25 OF THE CITY OF SOLANA BEACH LUP.

EXHIBIT 4-5 COASTAL BLUFF TOPOGRAPHY, APPROXIMATE BLUFF EDGE AND SETBACKS - SOUTH END OF CITY

Adopted Local Coastal Program Land Use Plan
City of Solana Beach, February 2013



CHANGE NO.	DESCRIPTION	APPROVED	DATE	BENCHMARK	SCALE	DESIGNED BY: SN	DRAWN BY: SN	CHECKED BY: JK	ENGINEERING DEPARTMENT APPROVALS		CITY OF SOLANA BEACH	DRAWING NO.
	DESCRIPTION: LOCATION: RECORD FROM: ELEVATION: DATUM: NAVD88				HORIZONTAL: 1" = 50' VERTICAL: N/A	PLANS PREPARED UNDER SUPERVISION OF JAMES KNOWLTON		DATE: R.C.E. NO.: EXP.:	RECOMMENDED: DATE	APPROVED: DATE	ESTIMATED TOP OF COASTAL BLUFF, 25' SETBACK, 40' SETBACK, AND APPROXIMATE GEOLOGIC SETBACK LINE	SHEET 5 OF 5



NOTE: COASTAL BASE FLOOD ELEVATIONS APPLY ONLY LANDWARD OF THE SHORELINE SHOWN ON THIS MAP.

Source: FEMA Effective Date: June 19, 1997

LEGEND





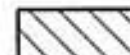
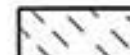
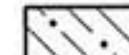



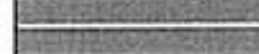
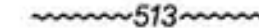

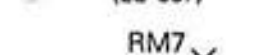


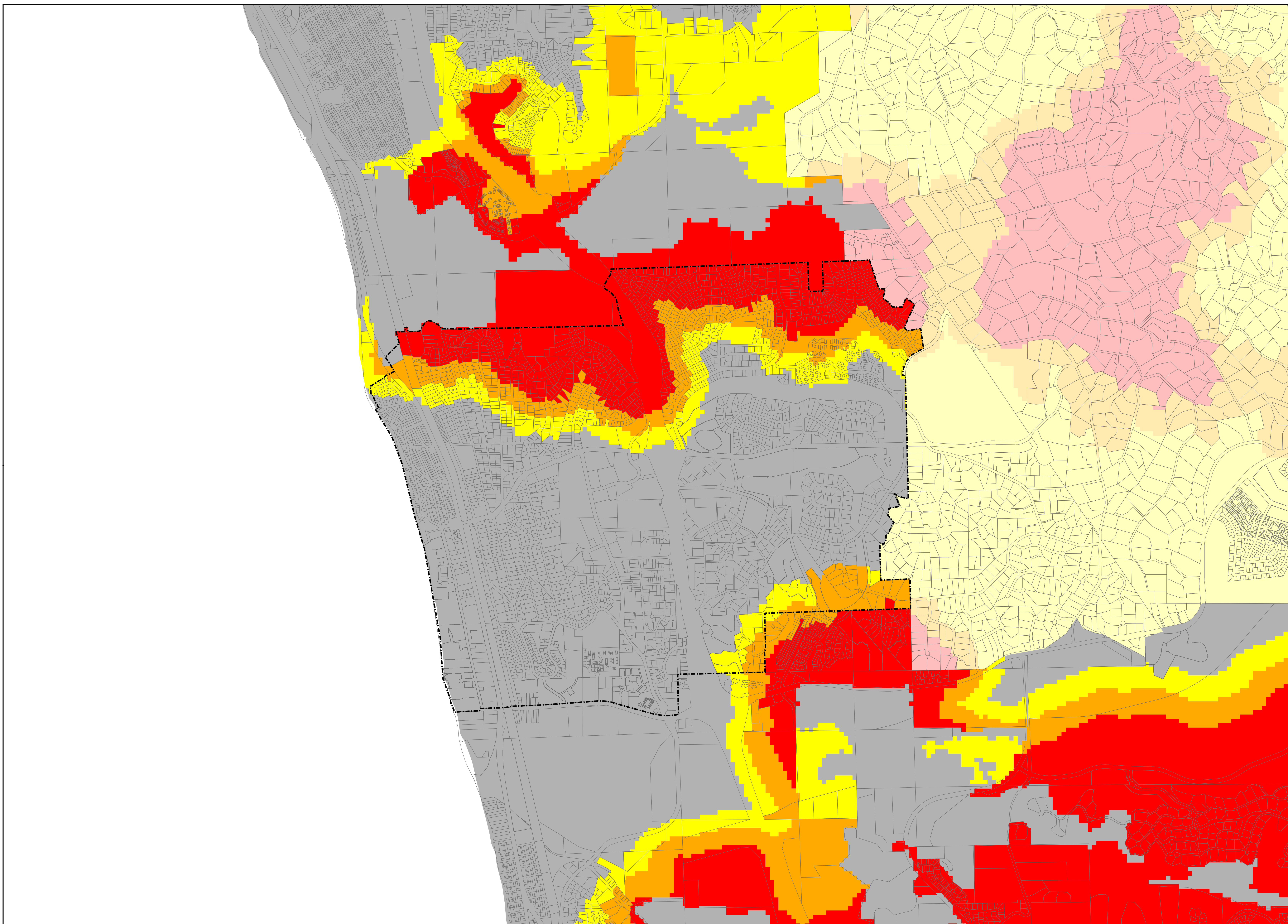
-  SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
- ZONE A** No base flood elevations determined.
- ZONE AE** Base flood elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.
-  FLOODWAY AREAS IN ZONE AE
-  OTHER FLOOD AREAS
- ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.
-  OTHER AREAS
- ZONE X** Areas determined to be outside 500-year floodplain.
- ZONE D** Areas in which flood hazards are undetermined.
- UNDEVELOPED COASTAL BARRIERS**
-  Identified 1983
-  Identified 1990
-  Otherwise Protected Areas
- Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.
-  Flood Boundary
-  Floodway Boundary
-  Zone D Boundary
-  Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
-  Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.
-  Cross Section Line
-  Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.
-  Elevation Reference Mark
-  River Mile
- Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

EXHIBIT 4-6 CITYWIDE FLOODPLAIN MAP

Adopted Local Coastal Program Land Use Plan
City of Solana Beach, February 2013



DRAFT Fire Hazard Severity Zones in LRA



Fire Hazard Severity Zones

Red	LRA Very High	Pink	Other Very High
Orange	LRA High	Light Orange	Other High
Yellow	LRA Moderate	Light Yellow	Other Moderate
Grey	LRA Unzoned	Light Grey	Other Unzoned

- - - City Boundary
 --- Parcels
 . . . County Boundary

Government Code 51175-89 direct the California Department of Forestry and Fire Protection (CAL FIRE) to map areas of very high fire hazard within Local Responsibility Areas (LRA). Mapping of the areas, referred to as Very High Fire Hazard Severity Zones (VHFHSZ), is based on relevant factors such as fuels, terrain, and weather. VHFHSZ maps were initially developed in the mid-1990s but are now being updated based on improved science, mapping techniques, and data.

The California Building Commission adopted the Wildland-Urban Interface codes in late 2005 to be effective in 2008. These new codes include provisions to improve the ignition resistance of buildings, especially from firebrands. The updated fire hazard severity zones will be used by building officials to determine appropriate construction materials for new buildings in the Wildland-Urban Interface. The updated zones will also be used by property owners to comply with natural hazards disclosure requirements at time of property sale and 100 foot defensible space clearance. It is likely that the fire hazard severity zones will be used for updates to the safety element of general plans.

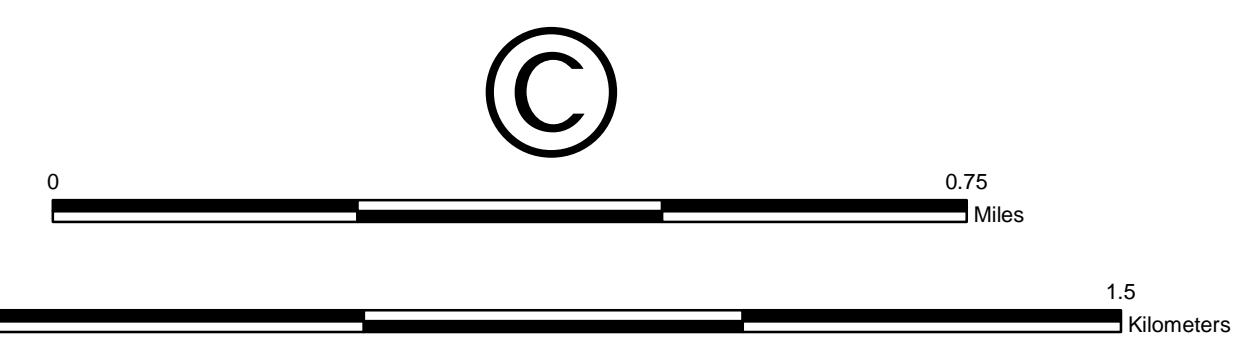
This map has been created by CAL FIRE's Fire and Resource Assessment Program (FRAP) using data and models describing development patterns, potential fuels over a 30-50 year time horizon, expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to new construction. Details on the project and specific modeling methodology can be found at <http://frap.cdf.ca.gov/projects/hazard/methods.htm>.

The version dated September 17, 2007 of the map shown here represents draft VHFHSZs within LRA, for review and comment by local government.

An interactive system for viewing map data is hosted by the UC Center for Fire at <http://firecenter.ucdavis.edu/inter>.

Questions can be directed to:
 Kathleen Schori (Northern Region) (530) 472-3121 kathleen.schori@fire.ca.gov
 Sissy Barton (Southern Region) (959) 243-4130 sissy.barton@fire.ca.gov

This map was developed using data products such as parcel and city boundaries provided by local government agencies. In certain cases, this includes copyrighted geographic information. The maps are for display purposes only - questions and requests related to parcel or city boundary data should be directed to the appropriate local government entity.



Projection Albers, NAD 1983
 Scale 1: 10,000
 at 36° x 36"
 September 17, 2007

The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.

Arnold Schwarzenegger, Governor,
 State of California
 Mike Chrisman, Secretary for Resources,
 The Resources Agency
 Ruben Grijalva, Director,
 Department of Forestry and Fire Protection

MAP ID: Solana Beach

Obtain FRAP maps, data, metadata and publications on the Internet at <http://frap.cdf.ca.gov>
 For more information, contact CAL FIRE-FRAP, PO Box 944246, Sacramento, CA 94244-2460, (916) 327-3939.

DATA SOURCES
 CAL FIRE Fire Hazard Severity Zones (FHSZL07_1)

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

1. Coastal Act Provisions

Under the Coastal Act, development is required to be sited and designed to minimize risks, assure stability and structural integrity, and neither create nor contribute significantly to erosion or require the construction of protective devices that would substantially alter the natural landforms along bluffs and cliffs (Section 30253). Section 30235 of the Coastal Act allows the construction of bluff retention devices where existing structures are threatened from erosion and when designed to eliminate or mitigate impacts on shoreline sand supply. The Coastal Act also provides that development damaged or destroyed by disasters can be rebuilt in the same location, exempt from a CDP, under certain conditions. Certain emergency actions are also exempt from permit requirements.

2. Land Use Plan Provisions

To ensure consistency with the Coastal Act, the policies contained below in the LUP are intended to facilitate development and redevelopment in a manner which minimizes impacts from hazards as well as impacts to coastal resources, including public access and recreation. The primary objectives of the City in reducing flood, fire and geologic hazards in the City include the establishment of policies that manage, reduce, minimize and/or avoid risks associated with known hazards in the City.

Reducing the potential adverse effects of shoreline hazards include implementing comprehensive and long-term shoreline management strategies, policies and programs that promote beach sand replenishment and retention to reduce the need for shoreline protection devices.

Where the clean sand lens is not exposed along the coastal bluff, seacave and infills may be considered as appropriate solutions that can avoid or postpone the need for larger shoreline protection device.

The LUP policies, goals, and requirements regarding natural hazards and shoreline and bluff development can be summarized as follows:

- Maintaining public ownership of the bluffs and beaches; Prohibiting new development that could require shoreline protection, and new land divisions which create new lots within high hazard areas;
- Requiring that new development on oceanfront bluffs be set back in accordance with all provisions of the LCP;
- Providing that applicants assume the risk of building in hazardous areas without the expectation that future bluff protection devices will be allowed;
- Acknowledging that the shoreline is inherently a changing, unstable area, and development along the shoreline should never be considered permanent.
- Regulating development to avoid the need for mid and upper bluff shoreline protection;

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- Developing emergency permit procedures, follow-up actions and monitoring to ensure that the emergency response, whether temporary or permanent, is the least environmentally damaging alternative to the extent feasible;
- Providing for the development of long-term shoreline management policies; Including measures to establish periodic nourishment of the City's beaches which are vulnerable to direct wave attack and erosion to assure long-term maintenance of beach area for public recreational use;
- Monitoring the issue of potential future sea level rise, both in the short term via permitting actions and a long-term response to address future development impacts along the shoreline;
- Siting and designing development to avoid or minimize risk from geologic, flood and fire hazards;
- Implementing a HOZ program for siting and designing development and to minimize grading and vegetation clearance on steep slopes;
- Providing that development utilize adequate drainage and erosion control measures both during construction and as a long-term feature; and,
- Requiring that new development be sited and designed to avoid the impacts of fuel modification and brush clearance on native habitat and neighboring property, particularly parkland.

This LCP includes an LUP and Local Implementation Plan (LIP) which will contain LIP implementing ordinances, and other code amendments, as needed, to implement the LCP. The following policies and plans are intended to implement the LCP.

It is essential that the implementation of the programs recommended herein, and achievement of the goals set forth herein, be balanced between public and private interests. The City is committed to implementing the above stated goals and strategies of the LCP.

This section addresses shoreline structures that alter natural shoreline processes. This section is intended to set the general policy framework for implementing the LCP.

The shoreline of Solana Beach is characterized by a narrow strip of sandy beach at the foot of coastal bluffs. This shoreline consists of public beach access points, public infrastructure improvements, private residences, the Fletcher Cove Community Center, Fletcher Cove Park, the City of Solana Beach Marine Safety Center, and other structures on the tops of the bluffs. Many improvements are situated within twenty-five feet of the bluff edge due to erosion or the siting of the original construction or both. The City's coastal bluff edge and 25' and 40' setback lines are shown in Exhibit 4-1, 4-2, 4-3, 4-4, and 4-5. Because of the narrowness of the beach and lack of a sand buffer, the bluffs are subjected to wave action, particularly during the winter months. Surficial

or subaerial erosion has also resulted from wind, rain, irrigation, storm water drainage, construction, elimination or reduction in upland sand sources to the coast, sand retention devices to the north of the City and climbing activity on the face of the bluff.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

A variety of bluff retention devices including seacave or notch infills, have been constructed in the Solana Beach in an attempt to protect bluff homes. However, based on the need to encapsulate the clean sand lens once it becomes exposed, these small protective efforts are often expanded over time into larger 35-foot high seawalls, with mid-bluff reconstruction and upper bluff retaining walls that together cover a larger portion of the bluff face.

In compliance with the Coastal Act, the goal of the LCP is to limit bluff retention devices on the public bluffs and beach area while protecting public and private property rights to the extent required by law and the health, safety, and welfare of residents and the public. The City's shoreline has largely been built out, and many of the existing structures located along the City's bluff tops were built in a location that is now considered at risk from shoreline erosion. Thus, some amount of lower bluff protection has been and will continue to be unavoidable to protect existing structures in danger from erosion pursuant to Section 30235 of the Coastal Act. However, the LCP policies acknowledge that modifications to the building footprint and its foundation further inland on private property must be analyzed as a potentially feasible alternative to avoid additional mid and upper bluff stabilization and alteration of the natural landform on public property to protect private development. Such stabilization measures can have particularly extensive adverse impacts on the natural bluff landform and the scenic quality of the shoreline even beyond those associated with lower bluff protection. In all cases, impacts from these devices on public access, recreation, scenic resources and sand supply must be mitigated.

For all new development, the LCP requires that the development be designed so that it will neither be subject to nor contribute to bluff instability, and is sited safely without reliance on existing or future shoreline protection.

The City is currently engaged in local, regional, state, and federal efforts to implement a comprehensive and long-term beach sand replenishment program. The LCP includes an approval process that emphasizes preferred bluff retention solutions and conditions of approval requiring the bluff property owner to agree to certain requirements, including the payment of mitigation fees.

The City's preferred bluff retention systems are derived from the most recent designs approved by both the City and the CCC and are contained in LUP Appendix B. Although generalized these designs represent the retention systems preferred by the City and have been accepted by the CCC as reflected in recently approved permits.

The following describes the types of preferred bluff retention systems to protect the lower bluff only:

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- **Infill/Bluff Stabilization – Seacave/Notch Infill (See Appendix B Figure 1A) –**
This first solution is designed to address sea caves and undercut portions of the lower dense sandstone bluff where the clean sand lens is not yet exposed. If left uncorrected, the seacave/undercut will eventually lead to block failures of the lower sandstone, exposure of the clean sand lens and landward bluff retreat. This failure exposes the clean sand lens of the upper bluff terrace deposits triggering rapid erosion and landward retreat of the upper bluff, which eventually endangers the structures at the top of the bluff. If treated at this stage, the Bluff Retention Device will minimize the need for a future higher seawall and future upper bluff repair. This alternative is not designed as a structural wall, is not reinforced, does not include tiebacks, and uses only erodible concrete which shall erode at the same erosion rate as the surrounding natural bluff material. The infill is required to maintain a textured and colored face mimicking the existing bluff material. Erodible concrete seacave/notch infills are designed to erode with the natural bluff and, when maintained to do so, are not subject to the sand supply mitigation, public access and recreation mitigation, encroachment/removal agreement, or authorization timeline policies of the LUP.
- **Infill/Bluff Stabilization – Lower Seawall (See Appendix B Figures 1B and 1C) –** This solution is designed to address sea caves and undercut portions of the lower dense sandstone bluff where the clean sand lens is not yet exposed. If left uncorrected the sea cave/undercut will eventually lead to block failures of the lower sandstone, exposure of the clean sand lens and landward bluff retreat. This failure exposes the clean sand lens of the upper bluff terrace deposits triggering rapid erosion and landward retreat of the upper bluff, which eventually endangers the structures at the top of the bluff. If treated at this stage, the bluff retention system will minimize the need for a future higher seawall and future upper bluff repair. Figure 1B will consist of an erodible concrete infill with a higher strength concrete face on the seaward portion of the infill or will be designed as a structural wall and will be reinforced, have structural tiebacks into the sandstone bedrock and will be required to have a textured face mimicking the existing material (Figure 1C).
- **Higher Seawall/Clean Sand Lens Encapsulation (See Appendix B Figure 2)**
– If the clean sand lens has been exposed, it may be necessary to build a seawall high enough cover this segment of the bluff face. This method consists of a structurally engineered seawall (with tiebacks into the sandstone) approximately 35' high to protect and encapsulate the clean sand lens at the base of the terrace deposits. The wall is required to have a textured face mimicking the existing material. If treated at this stage, the bluff retention system will minimize or prevent the need for future mid or upper stabilization.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

The City's preference for protecting existing principal structures in danger from erosion is relocating/rebuilding the principal structure on the site to a location that is stable per LUP Policy 4.25. If all feasible alternatives to mid and upper bluff protection have been excluded, then the following types of upper bluff retention systems may be utilized when collapse of the mid and upper bluff threatens an existing principal structure:

- **Seawall and Upper Bluff Repair (See Appendix B Figure 3)** – This retention system is an all-encompassing bluff stabilization measure and shall only be used when bluff failures have caused exposure of the clean sand lens and significant erosion of the mid and upper bluff. Encapsulation of the clean sand lens is needed to protect the bluff top principal structure from potential damage. This repair consists of a structurally engineered seawall (with tiebacks into the sandstone) approximately 35' high to protect and encapsulate the clean sand lens at the base of the terrace deposits. The upper bluff is reconstructed at a stable angle by bringing in additional soil which is then reinforced with a geogrid fabric. The lower seawall is textured to simulate the existing bluff material and the upper soil is similar to the existing soil and is hydro-seeded and planted with container plantings consisting of native, drought tolerant, non-invasive, and salt tolerant vegetation.
- **Upper Bluff Repair (See Appendix B Figure 4)** – This repair is used where there is a pre-existing lower bluff seawall, and/or infill/bluff repair and shall only be used when there is a need to stabilize the upper bluff terrace deposits to provide structural protection due to upper bluff failures or extreme erosion. When feasible, the building footprint and foundation should be moved inland and the bluffs left in a natural state. The repair is much like the upper bluff stabilization described in Preferred Solution #3. It should take into account lateral migration of erosion from adjacent properties, which would involve benching and placing erodible concrete between the clean sand lens and the bluff face to assure that the clean sand erosion does not undermine the stability of the upper bluff and bluff top principal structure. The slope is then rebuilt and reinforced to create an adequate safety factor to protect the upper bluff structure.
- **Caisson and Tieback Alternative (See Appendix B Figure 5)** – This bluff retention system, consists of drilled reinforced concrete caissons (24 inches or greater in diameter). These structurally designed caissons are drilled down to or into the lower sandstone bedrock, shall be below grade, and as far landward as possible to avoid exposure of the drilled caisson in the future. In many cases, to avoid future exposure, the structure requiring stabilization can also be moved further inland to a location that, in connection with the lower seawall, will assure stability of the structure and avoid alteration of the natural landform of the bluffs. In any event, it is required, as a condition of approval that the homeowner post a bond for a future reinforced concrete face to be constructed if the caissons are exposed. Additional tiebacks may be required at that time.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Prior to approval of any upper bluff retention system, a detailed alternative analysis must be performed, consistent with Policy 4.52. In addition, per Policy 4.52, on sites where there is existing lower bluff protection, no upper bluff retention system shall be approved unless it has been determined that removing and relocating/rebuilding the principal bluff top structure with a caisson foundation system in a location that will avoid future exposure and alteration of the natural landform is infeasible, resulting in a taking of private property for public use without just compensation.

Once the LCP is certified, the City will have jurisdiction to issue CDPs for projects landward of the MHTL, with the CCC retaining appeal jurisdiction only in those areas described in Section 30603 of the Coastal Act. Both before and after the certification of the LCP, the CCC retains original jurisdiction over development located on tidelands, submerged lands, filled and unfilled public trust lands). Accordingly, applications for all bluff retention devices to be sited seaward of the MHTL, within the Commission's original jurisdiction shall be submitted to the City for a major use permit and then to the Coastal Commission for a CDP.

All permits issued for developments within an area appealable to the CCC must be approved through a public hearing process. Appeal jurisdiction for the CCC is defined in Section 30603 of the Coastal Act and includes such geographic areas as those between the sea and the first public road paralleling the sea or within 300 feet of the inland extent of any beach or the MHTL where this is no beach, whichever is the greater distance; and any areas located within 300 feet of the top of the seaward face of any coastal bluff, or within 100 feet of any wetland, estuary, or stream; and any major public works project or major energy facility.

In cases where proposed development is bisected by the CDP jurisdiction boundary line, an applicant may, if all parties are in agreement (i.e., the City, the CCC, and the property owner), apply for a consolidated CDP from the CCC without needing to obtain a CDP from the City. Chapter 3 policies of the Coastal Act are the standard of review for such permits, with the City's certified LCP used for additional guidance.

To the extent an applicant proposes a bluff retention device which is designed in accordance with the preferred bluff retention solutions, the City will expedite processing and there will be a presumption of compliance of the design of the bluff retention device with the LCP. Nevertheless, the applicant will be required to establish the need for the bluff retention device in accordance with the findings stated below in Policies 4.48, 4.49 and 4.52.

The LCP contains provisions for imposing Sand Mitigation Fees and compliance with the City's Public Recreation Fees. Bluff property owners who construct bluff retention devices shall pay the City a Sand Mitigation Fee. The Sand Mitigation Fee formula is based on the CCC formula and is detailed in Appendix A.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Based on the October 2010 MHTL survey, the land on which bluff retention devices are proposed to be located may include public lands owned by the State of California, the City of Solana Beach or both. In addition, the location of the MHTL is constantly changing. For all development involving construction of a bluff retention device, a Public Recreation Fee shall be collected by the City which shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in-lieu of providing beach area to replace the public access and coastal recreation benefits that would be lost due to the impacts of any proposed protective structure. The method used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix C. Mitigation for impacts to ecological and other relevant coastal resource impacts that result from the construction of bluff retention devices are not included in this public recreation fee and the City's LUP shall be updated once an accepted approach on how to calculate these fees has been developed by the Commission. In association with approval of any bluff retention device located landward of the MHTL and on public land, the City will also require an encroachment/removal agreement to be renewed at least every 20 years. Additional mitigation for impacts to public access and recreation may also be required through site-specific review and approval of the coastal development permit.

The City will continue to aggressively pursue implementation of a comprehensive beach sand replenishment and retention program as the best approach to buffer bluffs from wave attack and reduce the need for bluff retention devices. Environmentally sound local, regional, state and federal beach sand replenishment and retention programs that the City is actively advancing include:

- Sand Compatibility and Opportunistic Use Program (SCOUP)
- Regional Beach Sand Project #2
- Regional Coastal Sediment Management Master Plan
- U.S. Army Corps Shoreline Protection Project for Solana Beach and Encinitas
- Southern California Reef Technology Project at Fletcher Cove

The City will continue to actively seek state and federal funding for expedited implementation of these programs and has prioritized the creation of a wider beach and a beach profile that can feasibly be established and maintained on City beaches for shoreline protection and recreation benefits. In implementing sand replenishment and retention programs, care will be taken such that any such program shall not result in net material degradation of existing surfing or other recreational or wildlife resources including near shore habitat.

The sand replenishment and retention programs are funded from a combination of sources including CCC Sand Mitigation and Recreation Impact Fees held by SANDAG, City imposed mitigation fees, taxes, assessments, grants and federal appropriations. Goals, implementing plans and budgets for each program have been established, and are periodically reviewed by the City and are modified as needed.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

A variety of sand retention systems will be carefully analyzed by the City, and may be evaluated by SANDAG before being deployed. The effectiveness of any such system, its potential environmental effects, the impact on recreational activities, aesthetics and safety, and other relevant issues will be addressed in compliance with CEQA and NEPA.

Beach replenishment and sand retention projects can be done concurrently or separately depending on funding resources and permitting constraints. Replenishment and retention are addressed separately below, but are being considered by the City in a coordinated fashion for maximum shoreline protection and recreational benefit.

The LCP includes standards that will be used to determine the need for bluff retention devices. Bluff retention devices shall provide for reasonable and feasible mitigation for their net impacts, such as the payment of mitigation fees.

Slope stability is a significant concern in Solana Beach along the entire coastal bluff area. These steep coastal bluffs have experienced loss of soil and rock resulting from a combination of natural forces and human activities. Ocean wave action weakens the base of the bluffs, particularly when high tides combine with high waves associated with Pacific Ocean storms.

Urban development on the bluff tops has placed increased loads on the geologic substructure. A combination of the lack from protective beach, saturation of bluff sands and increased subsurface flow resulting rain or from urban irrigation, contributes to weakening of the bluffs and surficial erosion. This erosion is generally experienced as sudden slippage rather than gradual movement. Loss of beach sand in recent years has further aggravated problems of slope instability. In response, shore protection devices have been used to abate further erosion, and to protect public recreational uses and private property.

Like much of southern California, Solana Beach lies within a region of high seismic activity. An offshore extension of the Rose Canyon fault lies approximately two miles west of Solana Beach. This fault is considered active by the State of California and a strong earthquake along this fault would create moderate to severe ground shaking in the City. Seismically-induced ground shaking in hillside areas could result in slumping or landslides in areas of slope instability.

Certain parts of Solana Beach may be subject to liquefaction which occurs when poorly consolidated and saturated soils lose their strength due to seismic shaking. The potential for liquefaction in the City is greatest in the area between Stevens Avenue and Valley Avenue, and in the area north of Via del la Valle between Del Mar Downs and Stevens Avenue. These two areas are underlain by poorly consolidated alluvium and slope wash that could liquefy during an earthquake depending on groundwater elevations.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Flooding problems in Solana Beach have historically occurred in the area near Stevens Avenue and Valley Avenue. Although City drainage system facilities are adequately sized to handle flood flows, capacity problems with downstream flood control facilities south of Via de la Valle have occasionally caused floodwaters to back up into the Stevens Avenue/Valley Avenue area.

Flood hazard areas in Solana Beach have been mapped through the National Flood Insurance Program administered by the U.S. Department of Housing and Urban Development (HUD) and the Federal Emergency Management Agency (FEMA) and are shown in Exhibit 4-6. The Flood Insurance Rate Map (FIRM) for the area identifies areas exposed to potential 100-year and 500-year flooding, including coastal flood hazard areas. Given the extent of existing urban development in Solana Beach, additional flooding effects resulting from new development on downstream areas are likely to be minor.

Fire hazards in Solana Beach may be classified as either structural fires or vegetation fires. The Solana Beach Fire Department is responsible for responding to both types of fire. For structural fires, the department designates certain locations, such as schools and higher density residential development as potential high life safety hazard areas.

Many properties in the northern part of the City are located within the WUI and have been designated by the State as being in a high or very high fire hazard severity area and are shown in Exhibit 4-7. The CalFire maps are posted on the City's website at [http://www.ci.solana-beach.ca.us/vertical/Sites/%7B840804C2-F869-4904-9AE3-720581350CE7%7D/uploads/Wildland_Urban_Interface_\(WUI\)_Map.pdf](http://www.ci.solana-beach.ca.us/vertical/Sites/%7B840804C2-F869-4904-9AE3-720581350CE7%7D/uploads/Wildland_Urban_Interface_(WUI)_Map.pdf).

Many of the northern-most line of homes in the City (closest to the San Elijo Lagoon) are contiguous to sensitive native habitat areas identified by the City as ESHA. One of the key goals of this Chapter of the LUP is to establish policies for the WUI that reduce fire hazard risk in the City to lives and property and also reduce the need for a 100-foot buffer between vegetation and homes thereby avoiding or reducing vegetation management practices. By establishing equivalent methods of fire risk reduction for homes in the WUI, and incorporating them into project design, the Fire Marshal is able to reduce the need for fire-risk reduction related vegetation management for existing homes, remodels, and new development.

Thinning of plant materials and other vegetation management practices reduce the fire risk for existing and new structures. Creating a defensible space around a structure acts as a barrier between a structure and an advancing fire. Maintaining a defensible fire space around structures is essential, and in some cases required, for protection against fire.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Uncontrolled wildfires pose a serious threat to human lives and property, but are generally part of the natural disturbance cycle of adjacent wildlands. The propensity of wildlands to carry fire to surrounding developments usually necessitates the provision of fuel breaks in order to reduce or eliminate the likelihood of damage to property. Properly maintained fuel modification zones and fire breaks will reduce the incidence of fires spreading from developed areas to natural land and lower the potential impacts of unseasonable and frequent wildfires to listed species and their habitats.

The LUP contains policies which require that any new development is sited and designed to avoid the need for fuel modification within ESHA. One potential method of reducing fire risk to properties adjacent to the WUI is to install a non-combustible wall thereby reducing the vegetation management zone. ESHA protection policies are contained in Chapter 3. Additionally, the LUP contains policies that require mitigation for impacts resulting from the removal, conversion, or modification of natural vegetation that cannot be avoided through the implementation of project alternatives. The mitigation to be provided includes one of three measures: habitat restoration, habitat conservation, or in-lieu fee for habitat conservation.

The City has worked with CalFire, the San Elijo Lagoon Conservancy, CDFW, the County of San Diego and other relevant state and federal agencies to develop the *San Elijo Lagoon Ecological Reserve Vegetation Management Plan*. This Plan was adopted by the City and the County in January 2009 and is aimed at reducing wildfire risk in the City. Policies aimed at reducing wildfire risk in the City are included below.

B. Coastal Act Policies

Section 30235:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Section 30236:

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Section 30253:

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.

C. Land Use Plan Policies

1. General Development

Policy 4.1: The City of Solana Beach contains areas subject to natural hazards that present risks to life and property. These areas require additional development controls to minimize risks. Potential hazards in the City include, but are not be limited to, the following:

- Coastal Bluffs
- Slopes with low stability & and high landslide potential: Hillside areas that have the potential to slide, fail, or collapse.
- Seismic ground shaking: Shaking induced by seismic waves traveling through an area as a result of an earthquake on a regional geologic fault.
- Liquefaction: Areas where water-saturated artificial fill or sediment can potentially lose strength and fail during strong ground shaking.
- Flood prone areas most likely to flood during major storms.
- Wave action: The entire shoreline is subject to direct wave attack and damage from wave activity due to a lack of protective beach.
- Tsunami: Low lying shoreline areas subject to inundation by a sea wave generated by local or distant earthquake, submarine landslide, subsidence, or volcanic eruption.
- Fire hazard: Areas subject to major wildfires located in the City's WUI.

Policy 4.2: Minimize the exposure of new development to geologic, flood and fire hazards. The Hillside/Coastal Bluff Overlay (HOZ) policies shall apply to all areas designated as within the HOZ on the City of Solana Beach LUP map (Exhibit 5-2) or where site-specific analysis indicates that the parcel contains slopes exceeding 25 percent grade.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.3: Regulate development in hillside areas to preserve the natural topography and enhance scenic qualities of the City, protect native coastal vegetation, preserve existing watersheds, and reduce the potential for environmental hazards including soil erosion, siltation of coastal wetlands, landslides, adverse impacts due to runoff, and other impacts which may affect general safety and welfare.

Policy 4.4: Any projects that propose building within the HOZ, on bluff properties, or inland bluff projects must include a geologic reconnaissance report to determine the geologic stability of the area. When additional information is needed to assess stability, a preliminary engineering geology report must also be prepared identifying the results of subsurface investigation regarding the nature and magnitude of unstable conditions, as well as mitigation measures needed to reduce or avoid such conditions. (HOZ applies to areas with steep slopes greater than 25% as shown in Exhibit 5-2).

Policy 4.5: Development within flood prone areas subject to inundation or erosion shall be prohibited unless no alternative building site exists on the legal lot and proper mitigation measures are provided to minimize or eliminate risks to life and property from flood hazard. The City shall ensure that permitted development and fill in the 100-year floodplain will not result in an obstruction to flood control and that such development will not adversely affect coastal wetlands, riparian areas, or other sensitive habitat areas within the floodplain. (The Floodplain Overlay applies to areas within the 100-year floodplain as shown in Exhibit 4-6)

Policy 4.6: Permitted infill development in the 100-year floodplain shall be limited to structures capable of withstanding periodic flooding without requiring the construction of on or off-site flood protective works or channelization. Proposed development shall be required to incorporate the best mitigation measures feasible pursuant to Public Resources Code Section 30236.

Policy 4.7: New development shall provide adequate drainage and erosion control facilities that convey site drainage in a non-erosive manner in order to minimize hazards resulting from increased runoff, erosion, and other hydrologic impacts to streams.

Policy 4.8: Land divisions, including lot line adjustments, shall be prohibited unless all proposed parcels can be demonstrated to be safe from flooding, erosion, fire and geologic hazards and will provide a safe, legal, all-weather access road(s), which can be constructed consistent with all policies of the LCP.

Policy 4.9: Information should be provided to the public concerning hazards and appropriate means of minimizing the harmful effects of natural disasters upon persons and property relative to siting, design and construction.

Policy 4.10: On ancient landslides, unstable slopes, and other geologic hazard areas new development shall only be permitted where an adequate factor of safety can be provided.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.11: Applications for new development for projects located within the HOZ, shall include a geologic/soils/geotechnical study that identifies any geologic hazards affecting the proposed project site, any necessary mitigation measures, and contains a statement that the project site is suitable for the proposed development and that the development will be safe from geologic hazard for the economic life of the structure. Such reports shall be signed by both a licensed Geotechnical Engineer and a certified engineering geologist, and be subject to review and approval by the City Public Works Director.

Policy 4.12: In the event that remediation or stabilization of landslides that affect existing structures or that threaten public health or safety is required multiple alternative remediation or stabilization techniques shall be analyzed to determine the least environmentally damaging alternative. Maximum feasible mitigation shall be incorporated into the project in order to minimize adverse impacts to resources and to preclude the need for future mitigation.

Policy 4.13: New development which does not conform to the provisions of the LCP shall be prohibited on property or in areas where such development would present an extraordinary risk to life and property due to an existing or demonstrated potential public health and safety hazard.

Non-Conforming Structures

Policy 4.14: Existing, lawfully established structures that are located between the sea and the first public road paralleling the sea (or lagoon) built prior to the adopted date of the LUP that do not conform to the provisions of the LCP shall be considered legal non-conforming structures. Such structures may be maintained and repaired, as long as the improvements do not increase the size or degree of non-conformity. Additions and improvements to such structures that are not considered Bluff Top Redevelopment, as defined herein, may be permitted provided that such additions or improvements themselves comply with the current policies and standards of the LCP. Complete demolition and reconstruction or Bluff Top Redevelopment is not permitted unless the entire structure is brought into conformance with the policies and standards of the LCP. See also Policy 5.45 which addresses non-Bluff Properties.

2. Shoreline Development

Policy 4.15: Implement a City-wide, long-term comprehensive shoreline management strategy which includes, but is not limited to, the following:

- An examination of local and regional long-term erosion rates and trends in order to reflect and plan for shoreline changes.
- An examination of mean sea level elevation trends and future sea level rise projections in order to include these conditions in future erosion rates and to plan for potential shoreline changes.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- Standard plans defining the preferred bluff retention solutions that would be acceptable or preferable, and where appropriate, identification of the types of armoring that should be avoided for certain areas or beaches in order to minimize risks and impacts from armoring to public access and scenic resources along the shoreline and beach recreation areas.
- Standard feasibility analysis of alternatives as a required element of bluff retention device projects to ensure that mid and upper bluff retention devices are avoided to the extent feasible. The analysis should require, but not be limited to, the use of technical evaluations of the site (geotechnical reports, engineering geology reports, and wave run up reports etc.), an examination of all other options (partial relocation, removal of seaward portions of the structure, revised building footprint and foundation, sand replenishment, sand retention devices, or no action, etc.), and a conclusion that a bluff retention device would be the only feasible means for protecting the existing principal structure in danger from erosion. The analysis will take into consideration the age and size of the structure, the size of the lot, whether the existing principal structure was constructed prior to the Coastal Act, and previous permit actions on the site that require consideration of alternatives to shoreline and bluff protective devices.
- Standard conditions and monitoring requirements which include mechanisms to ensure shoreline protection effectiveness with provisions for the modification or removal of ineffective, obsolete or hazardous bluff retention devices. Conditions requiring removal of shoreline and bluff protective devices if no longer required to protect a principal residential structure.
- Procedures to address emergency conditions, such as coordination with property owners; field inspections before and after storm seasons; guidance for types of preferred temporary emergency devices and a provision for their removal if a permit for a bluff retention device is not obtained.

Policy 4.16: Encourage SANDAG to maintain an inventory of available studies on local and regional coastal processes and beach resources for the purpose of advancing the SANDAG shoreline preservation strategies for the San Diego region. The City will consider participating in studies to fill information gaps on the regional effects of bluff retention devices, on beach and bluff erosion, and methods to protect the shoreline, and counteract erosion.

Policy 4.17: New development shall be set back a safe distance from the bluff edge, with a reasonable margin of safety, to eliminate the need for bluff retention devices to protect the new improvements. All new development, including additions to existing structures, on bluff property shall be landward of the Geologic Setback Line (GSL) as set forth in Policy 4.25. This requirement shall apply to the principal structure and accessory or ancillary structures such as guesthouses, pools, tennis courts, cabanas, and septic systems, etc. Accessory structures such as decks, patios, and walkways, which are at-grade and do not require structural foundations may extend into the setback area no closer than five feet from the bluff edge. On lots with a legally established bluff retention device, the required geologic analysis shall describe the

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

condition of the existing seawall; identify any impacts it may be having on public access and recreation, scenic views, sand supply and other coastal resources; and evaluate options to mitigate any previously unmitigated impacts of the structure or modify, replace or remove the existing protective device in a manner that would eliminate or reduce those impacts. In addition, any significant alteration or improvement to the existing structure shall trigger such review (i.e., the analysis of the seawall) and any unavoidable impacts shall be mitigated.

Policy 4.18: A legally permitted bluff retention device shall not be factored into setback calculations. Expansion and/or alteration of a legally permitted bluff retention device shall include a reassessment of the need for the shoreline protective device and any modifications warranted to the protective device to eliminate or reduce any adverse impacts it has on coastal resources or public access, including but not limited to, a condition for a reassessment and reauthorization of the modified device pursuant to Policy 4.53.

Policy 4.19: New shoreline or bluff protective devices that alter natural landforms along the bluffs or shoreline processes shall not be permitted to protect new development. A condition of the permit for all new development and blufftop redevelopment on bluff property shall require the property owner record a deed restriction against the property that expressly waives any future right that may exist pursuant to Section 30235 of the Coastal Act to new or additional bluff retention devices.

Policy 4.20: Existing, legal non-conforming publicly-owned facilities that are coastal-dependent uses such as public access improvements and lifeguard facilities located within 40 feet of the edge of the bluff edge, may be maintained, repaired and/or replaced as determined necessary by the City. Any such repair or replacement of existing public facilities shall be designed and sited to avoid the need for shoreline protection to the extent feasible.

Policy 4.21: New accessory structures on bluff properties shall be constructed in a manner that allows easy relocation landward or removal should they become threatened by coastal erosion or bluff failure. The City shall also condition CDPs authorizing accessory structures with a requirement that the permittee (and all successors in interest) shall apply for a CDP to remove the accessory structure(s) if it is determined by a licensed Geotechnical Engineer that the accessory structure is in danger from erosion landslide or other form of bluff collapse.

Policy 4.22: No bluff retention device shall be allowed for the sole purpose of protecting an accessory structure.

Policy 4.23: Where setbacks and other development standards could preclude the construction of a home the City may consider options including but not limited to reduction of the two car onsite parking space requirement to a one car onsite parking requirement or construction within five feet of the public right of way front yard setback for all stories as long as adequate architectural relief (e.g., recessed windows or

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

doorways or building articulation) is maintained as determined by the City. The City may also consider options including a caisson foundation with a minimum 40 foot bluff top setback to meet the stability requirement and avoid alteration of the natural landform along the bluffs. A condition of the permit for any such home shall expressly require waiver of any rights to new or additional bluff retention devices which may exist and recording of said waiver on the title of the bluff property.

Policy 4.24: Where adherence to the LCP policies on geologic setbacks and other development standards would preclude construction of a new primary residence on a Bluff Top Property, even with reductions in the front yard setback and parking standards, the Bluff Top Development project shall be reviewed as a site-specific LCP Amendment to allow the minimum development necessary to avoid a taking of private property for public use without just compensation.

Policy 4.25: All new bluff property development shall be set back from the bluff edge a sufficient distance to ensure that it will not be in danger from erosion and that it will ensure stability for its projected 75-economic life. To determine the GSL, applications for bluff property development must include a geotechnical report, from a licensed Geotechnical Engineer or a certified Engineering Geologist, that establishes the Geologic Setback Line (GSL) for the proposed development. This setback line shall establish the location on the bluff top where stability can be reasonably assured for the economic life of the development. Such assurance will take the form of a quantitative slope analysis demonstrating a minimum factor of safety against sliding of 1.5 (static) or 1.2 (pseudostatic, $k=0.15$ or determined through analysis by the geotechnical engineer), using shear strength parameters derived from relatively undeformed samples collected at the site. In no case shall the setback be less than 40 feet from the bluff edge, and only if it can be demonstrated that the structure will remain stable, as defined above, at such a location for its 75-year economic life and has been sited safely without reliance on existing or future bluff retention devices, other than a caisson foundation.

Furthermore, all new development including, but not limited to principal structures, additions, and ancillary structures, shall be specifically designed and constructed such that it could be removed in the event of endangerment.

The predicted bluff retreat shall be evaluated considering not only historical bluff retreat data, but also acceleration of bluff retreat made possible by continued and accelerated sea level rise, future increase in storm or El Niño events, the presence of clean sands and their potential effect on the pattern of erosion at the site, an analysis of the ongoing process of retreat of the subject segment of the shoreline, and any known site-specific conditions. To the extent the MEIR or geology reports previously accepted by the City address the issues referenced above and remain current, technical information in the MEIR and previously accepted geology reports may be utilized by an applicant. Any such report must also consider the long-term effects of any sand replenishment and/or retention projects to the extent not addressed in the MEIR or the EIR for the specific application.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.26: With respect to bluff properties only, the City will require the removal or capping of any permanent irrigation system within 100 feet of the bluff edge in connection with issuance of discretionary permits for new development, redevelopment, or shoreline protection, or bluff erosion, unless the bluff property owner demonstrates to the satisfaction of the Public Works Director, or the CCC if the project is appealed, that such irrigation has no material impact on bluff erosion (e.g., watering hanging plants over hardscape which drains to the street).

Policy 4.27: Require all bluff property landscaping for new development to consist of native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species.

Policy 4.28: All storm water drain systems that currently drain or previously drained towards the west over the bluff shall be capped. These systems should be redesigned to drain directly, or through a sump system, and then pumped to the street in compliance with SWP 2007-0001 and consistent with SUSMP requirements. This policy shall be implemented as a condition of approval for all discretionary permits issued for bluff properties or within 5 years of adoption of the LCP, whichever is sooner.

Policy 4.29: A bluff home may continue its legal non-conforming status; however, a Bluff Top Redevelopment shall constitute new development and cause the pre-existing non-conforming bluff home to be brought into conformity with the LCP. Entirely new bluff homes shall also conform to the LCP.

Policy 4.30: Limit buildings and structures on the sloped face and toe of the bluff to lifeguard towers, subsurface public utility drainage pipes or lines, bluff retention devices, public stairs and related public infrastructure which satisfy the criteria established in the LCP. No other permanent structures shall be permitted on a bluff face. Such structures shall be maintained so that they do not contribute to further erosion of the bluff face and are to be visually compatible with the surrounding area to the maximum extent feasible.

3. Shoreline Erosion and Protective Structures

Policy 4.31: Assess potential environmental effects associated with beach sand replenishment and sand retention projects as required under CEQA and NEPA.

Policy 4.32: When bluff retention devices are unavoidable, encourage applicants to pursue preferred bluff retention designs as depicted in Appendix B of the LUP when required to protect an existing principal structure in danger from erosion. All future bluff retention device applications should utilize these designs as the basis of site-specific engineering drawings to ensure consistency with the LUP.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.33: The City Manager, through City Staff, shall be responsible for: (a) contracting for the construction, routine maintenance, and repair of approved publicly owned bluff retention devices, if any; (b) approving permits for maintenance and repair activities of all private bluff retention devices with the bluff property owners responsible for and paying for all costs thereof; (c) monitoring and enforcing permit conditions, LUP and implementing ordinances requirements, and mitigation requirements which include aesthetic treatments, and payment of mitigation fees or fee deposits; (d) overseeing annual inspections of all bluff retention devices and notifying bluff property owners (and/or any assessing entity) of work which must be completed by the bluff property owner to ensure compliance with the aesthetic, structural and safety criteria set forth in the implementing ordinances; (e) preparing and submitting an annual status report on LCP related matters to the City Council; and (f) contracting for and removing bluff publicly owned retention devices where such removal is warranted and is in conformance with the LCP.

Policy 4.34: Identify, evaluate and pursue all feasible potential sources of revenue for funding the City's shoreline management policies and programs as contained in the LUP. Fundamental fairness dictates that the costs of the LCP's programs be allocated and shared in proportion to the benefits realized by the affected parties, including the public, the City, and the bluff property owners, respectively. Potential sources of funding may include, without limitation:

- Regional Sediment Management and opportunistic sand funding sources.
- Use of monies held by SANDAG from previous CCC sand and recreation mitigation fees collected for bluff retention devices in the City.
- City assessed Sand Mitigation Fees, which may be expended for sand replenishment and retention projects.
- City fees directly related to actual costs incurred by the City shall be established for the processing and issuance of permits, the use of City facilities and staff, and reasonable third party costs.
- Government grants (e.g., Federal Land and Water Conservation Fund, Army Corps of Engineers, Coastal Conservancy, State Tidelands Oil Revenue Fund, Oceanside Harbor mitigation fund, State Parks Bond, Open Space Bond Act, Park Land Bond Act, etc.).
- Bond financing.
- Parking revenues, beach fees, etc.
- Two percent of the existing, and any dedicated increases in, the transient occupancy tax; sales tax; or other dedicated taxes.
- Environmental mitigation fees (paid by third parties such as Caltrans, port districts, utility companies, developers, etc.).
- Funds from other parties responsible for loss of sand on the beach (e.g., water districts, sand mining companies, Caltrans, Amtrak, NCTD and any/all other property owners in the watershed, etc.) utilizing assessment districts or other equitable funding mechanisms.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.35: Establishment of an assessing entity, as subject to the approval of the majority of affected property owners, with such funds utilized solely to benefit those properties.

Policy 4.36: Ensure that rules governing any assessing entities are established and bound based on applicable State laws, regulations and requirements associated with the specific assessing entity.

Policy 4.37: Establish a Shoreline Account which will serve as the primary account where all funds generated pursuant to the Hazards & Shoreline/Bluff Development Chapter of the LUP will be held. The City should invest the Shoreline Account funds prudently and expend them for purposes outlined in the LCP including, without limitation:

- Sand replenishment and retention studies and projects;
- Updating the October 2010 MHTL Survey;
- Preparation of other shoreline surveys and monitoring programs;
- Opportunistic beach nourishment programs and development of stockpile locations;
- Repair and maintenance of bluff retention devices subject to reimbursement by the affected non-compliant bluff property owners;
- Public recreation improvements;
- Repair and replacement of beach access infrastructure;
- Insurance premiums; and
- Shoreline related litigation.

The City may use the funds in the Shoreline Account, subject to the restrictions of any terms of the funding sources, to pay for projects such as beach sand replenishment and retention structures, public recreation and public beach access improvement projects, feasibility and impact studies, operating expenses, insurance, and litigation; and to pay to conduct surveys and monitoring programs.

Policy 4.38: Maximize the natural, aesthetic appeal and scenic beauty of the beaches and bluffs by avoiding and minimizing the size of bluff retention devices, preserving the maximum amount of unaltered or natural bluff face, and minimizing encroachment of the bluff retention device on the beach, to the extent feasible, while ensuring that any such bluff retention device accomplishes its intended purpose of protecting existing principal structures in danger from erosion.

Policy 4.39: Provide for reasonable and feasible mitigation for the impacts of all bluff retention devices which consists of the payment of Sand Mitigation Fees and Public Recreation Fees to the City or other assessing agency.

Policy 4.40: Maintain adequate signage to warn the public of the dangers associated with bluff collapse to minimize public and private safety risks inherent in the ongoing existence of unprotected, and unstable natural bluffs.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.41: Ensure that each bluff property owner is able to enjoy reasonable use of his/her or its property as required by law, and where setbacks cause reasonable use to be difficult to achieve, acquisition of the bluff property by the City should be encouraged, if feasible.

Policy 4.42: The City, and in cases of original jurisdiction the CCC, shall regulate every bluff retention device including initial approval, construction, maintenance and repair activities for the life of the device.

Policy 4.43: Allow reasonable use of City property by a bluff property owner during the construction of a bluff retention device. For example, the City could allow use of City parking lots (with the exception of the Fletcher Cove parking lot) or other appropriate properties for staging areas and reasonable access to City ramps and the beach if reasonable impacts to public access and recreation can be avoided or minimized so as to have little material impact. However, except in emergency situations, no work on the beach shall occur on weekends, holidays or between Memorial Day weekend and Labor Day. In no case shall equipment be stored on the sandy beach overnight. The Fletcher Cove Park access ramp and all public parking spaces within Fletcher Cove shall remain open and available to public use during construction. Access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.

Policy 4.44: Acknowledge the importance of balancing the rights of private property owners with minimizing, and potentially eliminating, the need for future bluff retention devices by the provision of alternate forms of protection such as a wide sandy beach, thereby reducing the impacts of such devices and achieving a more natural and attractive beach and bluff compared to what exists now.

Policy 4.45: The City has adopted preferred bluff retention solutions (see Appendix B) to streamline and expedite the City permit process for bluff retention devices. The preferred bluff retention solutions are designed to meet the following goals and objectives:

- (1) Locate bluff retention devices as far landward as feasible;
- (2) Minimize alteration of the bluff face;
- (3) Minimize visual impacts from public viewing areas; ,
- (4) Minimize impacts to adjacent properties including public bluffs and beach area; and,
- (5) Conduct annual visual inspection and maintenance as needed.

The bluff property owner's licensed Civil or Geotechnical Engineer must examine the device for use in the specific location and take responsibility for the design as the Engineer of Record.

The Bluff Property Owner shall arrange for and pay the costs of:

- (1) The licensed Geotechnical or Civil Engineer;

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- (2) The bluff retention device;
- (3) A bond to ensure completion of the bluff retention device;
- (4) Appropriate mitigation; and
- (5) All necessary repairs, maintenance, and if needed removal.

Applicants who seek permits to install a preferred bluff retention solution can do so on a streamlined basis, relying on previously approved standards and designs, and shall receive expedited processing from the City. As technology develops, the City will consider other preferred bluff retention solutions that meet the goals and policies of the LCP, as an amendment to the LUP or within the LIP.

Applications for coastal development permits for all bluff retention devices where any portion of which will be sited seaward of the MHTL, shall be submitted first to the City for approval of a major use permit and then to the CCC for a coastal development permit. The CCC has original jurisdiction for the portion of the bluff retention device that will be sited seaward of the MHTL. Such developments shall be subject to this LCP for the portions within the City's jurisdiction. Chapter 3 of the Coastal Act will be the standard of review for the portion within the CCC's jurisdiction. For beachfront development that will be subject to wave action periodically, unless the State Lands Commission determines that there is no evidence that the proposed development will encroach on tidelands or other public trust interests, the City shall reject the application on the grounds that it is within the original permit jurisdiction of the CCC and shall direct the applicant to file his or her application with the CCC.

Policy 4.46: The City shall allow applicants proposing to install something other than a preferred bluff retention solution to apply for such an alternate design, but said applicants will not be eligible for the expedited processing and other benefits associated with preferred bluff retention solutions. Such non-standard designs shall, in most instances, undergo a more complete CEQA review as applicable, and would not enjoy the imprimatur of pre-approval associated with a preferred bluff retention solution.

Policy 4.47: All proposed development on a beach or along the shoreline, including a shoreline protection structure located within the jurisdiction of the State Lands Commission: (1) must be reviewed and evaluated in writing by the State Lands Commission and (2) may not be permitted if the State Lands Commission determines that the proposed development is located on public tidelands or would adversely impact tidelands unless State Lands Commission approval is given in writing.

Policy 4.48: A Seacave/Notch Infill shall be approved only if all the findings set forth below can be made and the stated criteria satisfied.

- (a) Based upon the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below:

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- (1) The Seacave/Notch Infill is more likely than not to delay the need for a larger coastal structure or upper bluff retention structure, that would, in the foreseeable future, be necessary to protect and existing principal structure, City facility, and/or City infrastructure, from danger of erosion. Taking into consideration any applicable conditions of previous permit approvals for development at the site, a determination must be made based on a detailed alternatives analysis that none of the following alternatives to the coastal structure are currently feasible, including:
 - Controls of surface water and site drainage;
 - A smaller coastal structure; or
 - Other non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, and contiguous bluff properties; and,
 - (2) The bluff property owner did not create the necessity for the Seacave/Notch Infill by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were "reasonable," the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence as well as relevant facts and circumstances.
 - (3) The location, size, design and operational characteristics of the proposed Seacave/Notch Infill will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar bluff retention device and the Seacave/Notch Infill is the minimum size necessary to protect the principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts as provided for in this LCP.
- (b) The Seacave/Notch Infill shall be designed and constructed:
- (1) To avoid migration of the Seacave/Notch Infill onto the beach;
 - (2) To be re-contoured to the face of the bluff, as needed, on a routine basis, through a CDP or exemption, to ensure the Seacave/Notch Infill conforms to the face of the adjoining natural bluff over time, and continues to meet all relevant aesthetic, and structural criteria established by the City;

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- (3) To serve its primary purpose which is to delay the need for a larger coastal structure, and designed to be removable, to the extent feasible, provided all other requirements under the LCP are satisfied; and,
- (4) To satisfy all other relevant LCP and City Design Standards, set forth for Bluff Retention Devices.

Policy 4.49: Coastal structures shall be approved by the City only if all the following applicable findings can be made and the stated criteria satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and subject to an encroachment/removal agreement approved by the City.

(a) Based upon the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below.

- (1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure.
- (2) The coastal structure is more likely than not to preclude the need for a larger coastal structure or upper bluff retention structure. Taking into consideration any applicable conditions of previous permit approvals for development at the subject site, a determination must be made based on a detailed alternatives analysis that none of the following alternatives to the coastal structure are currently feasible, including:
 - A Seacave/Notch Infill;
 - A smaller coastal structure; or
 - Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure, which might include other non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, and contiguous bluff properties;
- (3) The bluff property owner did not create the necessity for the coastal structure by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were reasonable, the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence, as well as, relevant facts and circumstances.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- (4) The location, size, design and operational characteristics of the proposed coastal structure will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar coastal structure and the coastal structure is the minimum size necessary to protect the principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP.
- (b) The coastal structure shall meet City Design Standards, which shall include the following criteria to ensure the coastal structure will be:
 - (1) Constructed to resemble as closely as possible the natural color, texture and form of the adjacent bluffs;
 - (2) Landscaped, contoured, maintained and repaired to blend in with the existing environment;
 - (3) Designed so that it will serve its primary purpose of protecting the bluff home or other principal structure, provided all other requirements under the implementing ordinances are satisfied, with minimal adverse impacts to the bluff face;
 - (4) Reduced in size and scope, to the extent feasible, without adversely impacting the applicant's bluff property and other properties; and
 - (5) Placed at the most feasible landward location considering the importance of preserving the maximum amount of natural bluff and ensuring adequate bluff stability to protect the bluff home, City facility, or City infrastructure.
- (c) Mitigation for the impacts to shoreline and sand supply, public access and recreation and any other relevant coastal resource impacted by the coastal structure is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the coastal structure beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the coastal structure to lessen the coastal structure's impacts in coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of the CDP issuance until CDP expiration, which evaluate whether or not the coastal structure is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized coastal structure within six months of a determination that the coastal structure is no longer required to protect the existing structure it was designed to protect.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.50: The bluff property owner shall pay for the cost of the coastal structure or Infill and pay a Sand Mitigation Fee and a Public Recreation Fee per LUP Policy 4.39. These mitigation fees are not intended to be duplicative with fees assessed by other agencies. It is anticipated the fees assessed as required by this LCP will be in conjunction with, and not duplicative of, the mitigation fees typically assessed by the CCC and the CSLC for impacts to coastal resources from shoreline protective devices.

Sand Mitigation Fee - to mitigate for actual loss of beach quality sand which would otherwise have been deposited on the beach. For all development involving the construction of a bluff retention device, a Sand Mitigation Fee shall be collected by the City which shall be used for beach sand replenishment and/or retention purposes. The mitigation fee shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing sand to replace the sand that would be lost due to the impacts of any proposed protective structure. The methodology used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix A. The funds shall solely be used to implement projects which provide sand to the City's beaches, not to fund other public operations, maintenance, or planning studies.

Sand Mitigation Fees must be expended for sand replenishment and potentially for retention projects as a first priority and may be expended for public access and public recreation improvements as secondary priorities where an analysis done by the City determines that there are no near-term, priority sand replenishment Capital Improvement Projects (CIP) identified by the City where the money could be allocated. The Sand Mitigation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

Public Recreation Fee – The City and the CCC have developed a method for calculating a Public Recreation Fee for the City of Solana Beach. To mitigate for impacts to public access and recreation resulting from loss of beach area, for all development involving construction of a bluff retention device, a Public Access and Recreation Fee shall be collected by the City which shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing beach area to replace the public access and coastal recreation benefits that would be lost due to the impacts of any proposed protective structure. The method used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix C. The funds shall solely be used to implement projects which augment and enhance public access and coastal recreation along the shoreline, not to fund other public operations, maintenance or planning studies.

Project applicants have the option of proposing a public recreation/access project in lieu of payment of Public Recreation Fees to the City. At the City's discretion, these projects may be accepted if it can be demonstrated that they would provide a directly-related recreation and/or access benefit to the general public.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Public Recreation Fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment and retention as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access CIP identified by the City where the money could be allocated. The Public Recreation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

Policy 4.51: The erosion rate, being critical to the fair and accurate calculation of the Sand Mitigation Fee shall be reviewed, after notice and public hearing, at least every ten years, and more often if warranted by physical circumstances, such as major weather events, or large-scale sand replenishment projects and possible changes in coastal dynamics due to, among others, climate change, and future changes in sea level. If warranted, the erosion rate should be adjusted by the City with input from a licensed Civil or Geotechnical Engineer based upon data that accurately reflects a change in the rate of erosion of the bluff. Any such change shall be subject to the public hearing and a vote of the City Council.

Policy 4.52: An upper bluff system shall be approved only if all the following applicable findings can be made and the stated criteria will be satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and subject to an encroachment/removal agreement approved by the City.

(a) Based on the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below.

- (1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure in danger from erosion.
- (2) The bluff home, city facility, city infrastructure, and/or principal structure is more likely than not to be in danger within one year after the date an application is made to the City.

Taking into consideration any applicable conditions of previous permit approval for development at the subject site, determination must be made based on a detailed alternatives analysis that none of the following alternatives to the upper bluff system are then currently feasible, including:

- No upper bluff system;
- Vegetation;
- Controls of surface water and site drainage;
- A revised building footprint and foundation system (e.g., caissons) with a setback that avoids future exposure and alteration of the natural landform;

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- A smaller upper bluff system;
 - Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure which might include tie-backs, other feasible non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, the public beach, and, contiguous bluff properties; or
 - Removal and relocation of all, or portions, of the affected bluff home, city facilities or city infrastructure.
- (3) The bluff property owner did not create the necessity for the upper bluff system by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were reasonable, the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence as well as relevant facts and circumstances.
- (4) The location, size, design and operational characteristics of the proposed upper bluff system will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar upper bluff system and the upper bluff system is the minimize size necessary to protect the existing principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP.
- (b) The upper bluff system shall meet City Design Standards applicable to bluff retention devices, including ensuring the natural bluff face is preserved to the greatest extent feasible, by using soft systems such as Geogrid, Geoweb, and planted with native species. The upper bluff system shall be designed to minimize alterations of natural landforms and shall not have a material adverse visual impact. The upper bluff slope shall be designed to have both vertical and horizontal relief.
- (c) All upper bluff systems shall be subject to the same permitting time frames as specified for a coastal structure, and may be subject to removal based upon the same time frames and similar criteria set forth for removal of coastal structures, as reasonably determined by the City.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

(d) Mitigation for the impacts to shoreline and sand supply, public access and recreation and any other relevant coastal resource impacted by the upper bluff system is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the upper bluff system beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the upper bluff system to lessen the upper bluff system's impacts on coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of the CDP issuance until CDP expiration, which evaluate whether or not the upper bluff system is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized upper bluff system within six months of a determination that the upper bluff system is no longer required to protect the existing structure it was designed to protect.

Policy 4.53: All permits for bluff retention devices shall expire when the currently existing blufftop structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and a new CDP must be obtained. Prior to expiration of the permit, the bluff top property owner shall apply for a coastal development permit to remove, modify or retain the protective device. In addition, expansion and/or alteration of a legally permitted existing bluff retention device shall require a new CDP and be subject to the requirements of this policy.

The CDP application shall include a re-assessment of need for the device, the need for any repair or maintenance of the device, and the potential for removal based on changed conditions. The CDP application shall include an evaluation of:

- The age, condition and economic life of the existing principal structure;
- Changed geologic site conditions including but not limited to, changes relative to sea level rise, implementation of a long-term, large scale sand replenishment or shoreline restoration program; and
- Any impact to coastal resources, including but not limited to public access and recreation.

The CDP shall include a condition requiring reassessment of the impacts of the device in 20 year mitigation periods pursuant to Policies 4.49 and 4.53.

No permit shall be issued for retention of a bluff retention device unless the City finds that the bluff retention device is still required to protect an existing principal structure in danger from erosion, that it will minimize further alteration of the natural landform of the bluff, and that adequate mitigation for coastal resource impacts, including but not limited to impacts to the public beach, has been provided.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.54: Any bluff retention device shall be reasonably maintained and repaired by the bluff property owner on an “as needed” basis, at the bluff property owner’s expense, in accordance with the implementing ordinances and any permit issued by the City. Any authorized assessing entity in which the project lies shall ensure such payments are reimbursed to the City if the bluff property owner fails to perform such work and the City elects to do so, subject to mandatory reimbursement. However, in all cases, after inspection, it is apparent that repair and maintenance is necessary, including maintenance of the color of the structures to ensure a continued match with the surrounding native bluffs, the bluff property owner or assessing entity shall contact the City or CCC office to determine whether permits are necessary, and, if necessary, shall subsequently apply for a coastal development permit for the required maintenance.

Policy 4.55: To achieve a well maintained, aesthetically pleasing, and safer shoreline, coordination among property owners regarding maintenance and repair of all bluff retention devices is strongly encouraged. This may also result in cost savings through the realization of economies of scale to achieve these goals by coordination through an assessing entity. All bluff retention devices existing as of the date of certification of the LCP, to the extent they do not conform to the requirements of the LCP, shall be deemed non-conforming. A bluff property owner may elect to conform his/her/its bluff property or bluff retention device to the LCP at any time if the City finds that an existing bluff retention device that is required to protect existing principal structures in danger from erosion is structurally unsound, is unsafe, or is materially jeopardizing contiguous private or public principal structures for which there is no other adequate and feasible solution, then the City may require reconstruction of the bluff retention device.

Policy 4.56: A program should be developed in conjunction with state and federal agencies, to provide incentives to relocate existing development out of hazardous areas and to acquire bluff properties that have been damaged by storm activities, where relocation of development to a safer location on the site is not feasible and additional protection measures are not feasible.

Policy 4.57: Siting and design of new shoreline development and bluff retention devices shall take into account predicted future changes in sea level. In particular, an acceleration of the historic rate of sea level rise shall be considered and based upon up-to-date scientific papers and studies, agency guidance (such as the 2010 Sea Level Guidance from the California Ocean Protection Council), and reports by national and international groups such as the National Research Council and the Intergovernmental Panel on Climate Change. Consistent with all provisions of the LCP, new structures shall be set back a sufficient distance landward to eliminate or minimize, to the maximum extent feasible, hazards associated with anticipated sea level rise over the expected economic life of the structure.

Policy 4.58: Development on the bluffs, including the construction of a bluff retention device, shall include measures to ensure that:

- No stockpiling of dirt or construction materials shall occur on the beach;

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

- All grading shall be properly covered and sandbags and/or ditches shall be used to prevent runoff and siltation;
- Measures to control erosion shall be implemented at the end of each day's work;
- No machinery shall be allowed in the intertidal zone at any time to the extent feasible;
- All construction debris shall be properly collected and removed from the beach. Shotcrete/concrete shall be contained through the use of tarps or similar barriers that completely enclose the application area and that prevent shotcrete/concrete contact with beach sands and/or coastal waters.

Policy 4.59: All new swimming pools and in-ground spas on bluff property shall contain double wall construction with drains and leak detection systems. All new swimming pools and in-ground spas shall be located landward of the geologic setback line.

Policy 4.60: Existing bluff retention devices which are not considered preferred bluff retention solutions and do not conform to the provisions of the LCP, including the structural or aesthetic requirements may be repaired and maintained to the extent that such repairs and/or maintenance conform to the provisions of the LCP.

4. Beach Sand Replenishment and Retention

Policy 4.61: Establish a wide, safe, sand beach to: (a) maintain, and when feasible, provide increased public access and recreational opportunities; (b) minimize impacts on sensitive marine resources; (c) protect water quality; (d) mitigate adverse impacts of bluff retention devices.

Policy 4.62: Continue to coordinate with SANDAG, the USACE, the State Lands Commission, California Department of Boating and Waterways, and others to establish and fund programs for periodic sand nourishment of beaches which are vulnerable to wave damage and erosion. Beach nourishment programs should include measures to minimize potential adverse biological resource impacts from deposition of material, including measures such as timing or seasonal restrictions and identification of environmentally preferred locations for deposits. Any program for beach sand nourishment shall not be effective until certified as an amendment to the LCP by the CCC or permitted as an independent project subject to a CDP.

Policy 4.63: Subject to coastal development permit requirements, the beneficial reuse and placement of sediments removed from erosion control or flood control facilities at appropriate points along the shoreline may be permitted for the purpose of beach nourishment. Any beach nourishment program for sediment deposition shall be designed to minimize adverse impacts to beach, intertidal and offshore resources, shall incorporate appropriate mitigation measures, and shall consider the method, location, and timing of placement. Sediment removed from catchment basins may be disposed of in the littoral system if it is tested and found to be of suitable grain size and type and a coastal development permit for such disposal has been obtained. The program shall

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

identify and designate appropriate beaches or offshore feeder sites in the littoral system for placement of suitable materials from catchment basins.

Policy 4.64: Implement a series of projects implemented within the regulatory and permitting framework of the SCOUN program to provide data for planning of a long-term beach replenishment and retention program. This series of SCOUN projects may be used to determine the quantity and quality of sand needed to effectively widen the beach without being detrimental to offshore biological resources. Quantities of sand in the pilot projects and the specific sand placement locations will be determined based on the assessment of opportunities and constraints within the City.

Policy 4.65: Pursue a demonstration/temporary pilot project for a sand retention device such as a submerged, or emergent reef, groin field, or short T-head groin or other structure if approved through the coastal development permit and/or Federal consistency review by the CCC. The environmental, recreational, and aesthetic effects of any sand retention structure will be considered in its planning and design in compliance with CEQA and NEPA. The City will also consider any implementation of sand replenishment and retention structures in a regional context and in cooperation with other cities' beach sand retention efforts.

Policy 4.66: Monitor SCOUN projects according to their regulatory permit requirements by using standardized aerial photography, LIDAR, and/or other appropriate technologies as they become available and accepted for use in monitoring beach conditions, examining several beach profiles and the condition of the beach sand retention structures, sediment sampling, and evaluation of effects on the beach and near shore ecology. Any such SCOUN project will also be monitored for recreational resource impacts, turbidity, sediment compatibility, traffic, and hazardous materials. These data will be analyzed to identify the effectiveness of any such sand replenishment and retention efforts at the end of the SCOUN program. The level of effect on sensitive biological resources (e.g., surfgrass, threatened or endangered species) and other effects on high quality hard bottom reefs will be quantified, and rates, and patterns of sand loss, and deposition will be determined. If feasible, changes in beach user patterns will also be identified and reported.

Policy 4.67: Develop a long-term beach replenishment program based on data and analysis from the Regional Beach Sand Project (RBSP) and SCOUN programs. Longer-term projects will be implemented at regular intervals in the future as determined by sand loss rates or as needed after severe storm seasons. Planning and budgeting will be established to carry out the program to a pre-determined date. The City should take into account climate change research and projections of future sea level rise using the most relevant, valid, and peer-reviewed data sets relative to long term planning assumptions to ensure regional planning consistency. The most relevant research into design and maintenance plans for the long-term beach sand replenishment and retention program should also be considered. The effectiveness of any such program will be reassessed after a specified period, but at least every five years, to identify any needed modifications.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.68: Participate in and encourage other long-term beach sand replenishment and retention programs at the federal, state, and regional level.

Policy 4.69: Install or maintain a sand retention structure or structures based on analysis of the performance of any temporary structures. The design of a long-term structure or structures will be based on the monitoring results of the pilot project and of projects at other locations. The environmental and aesthetic effects of any long-term structure will be fully taken into account in its planning, design, and implementation.

Policy 4.70: Inform applicants, for new development in the City and in surrounding areas that do not have permitted SCoup programs, of the City's SCoup program and encouraged them to participate. Development on upland sites that will result in 5,000 cubic yards, or more, of export should be required to test the material for suitability for beach deposition. If suitable, the material should be placed on the beach via the SCoup program.

5. Fire Hazard Management in the Wildland Urban Interface

Policy 4.71: All new development in the WUI or adjacent to ESHA shall be sited and designed to minimize required fuel modification to the maximum extent feasible in order to avoid environmentally sensitive habitat disturbance or destruction, removal or modification of natural vegetation, while providing for fire safety

Policy 4.72: All discretionary permit applications for projects shall be reviewed by the City's Fire Marshal to determine if any thinning or clearing of native vegetation is required to determine if any thinning or clearing of native vegetation is required. The Fire Marshal may reduce the 100' fuel management requirement for existing development, when equivalent methods of wildfire risk abatement are included in project design.

Policy 4.73: Equivalent methods of fire risk reduction shall be determined on a case-by-case basis by the Fire Marshal and may include the following, or a combination of the following, but are not limited to:

- Compliance with Building Code and Fire Code requirements for projects located in the WUI (State Fire Code Chapter 7A);
- Installation of a masonry or other non-combustible fire resistant wall up to six feet in height;
- Exterior sprinklers to be used in an emergency for fire suppression;
- Boxed eaves;
- Reduced landscaping that is compliant with the County of San Diego fire hazard risk reduction plant list and planting guidelines;
- Other alternative construction to avoid the need for vegetation thinning, pruning or vegetation removal.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.74: Within the WUI (Exhibit 4-7), the area within 100 feet of a habitable structure is divided into two zones as follows. Zone 1 is located from 0 - 30 feet from the residence and Zone 2 located from 30-100 feet from the residence.

Policy 4.75: Required fuel modification that may take place in both zones is defined as follows: In Zone 1, thin, prune or remove and replace vegetation and in Zone 2 thinning of non-natives and removal of dead vegetation. Vegetation shall be thinned to a height of 18 inches. Root systems and stumps will be left in place to minimize soil disturbance and soil erosion. All fuel modification work will be done by hand crews only.

Policy 4.76: The City Fire Marshal retains the discretion to reduce or expand the fire zones on a case-by-case basis, with specific findings due to factors that may include, but are not limited to building material, topography, vegetation load, and type.

Policy 4.77: Fuel Modification Requirements for Existing Development - The City shall encourage property owners to implement fire risk reduction alternatives, including those listed in Policy 4.73 as a priority over fuel modification in ESHA. However, the City Fire Marshal may require fuel modification to occur adjacent to existing development as outlined in the established zones. If fuel modification is required by the Fire Marshal for existing development that would encroach into ESHA, the alternative that has the least impact on ESHA shall be implemented where feasible.

Policy 4.78: Fuel Modification Requirements for Additions to Existing Structures – Where a new addition would encroach closer than 100 feet to an ESHA, the City Fire Marshal shall review the project for fuel modification requirements. If a 100 foot fuel modification zone would encroach into ESHA, the additions shall not be permitted unless the addition would not encroach any closer to ESHA than existing principal structures on either side of the development.

Policy 4.79: Fuel Modification Requirements for New Development – New development, including but not limited to subdivisions and lot line adjustments shall be sited and designed so that no brush management or the 100 ft. fuel modification encroaches into ESHA.

Policy 4.80: For purposes of this section, "encroachment" shall constitute any activity which involves grading, construction, placement of structures or materials, paving, removal of native vegetation including clear-cutting for brush management purposes, or other operations which would render the area incapable of supporting native vegetation or being used as wildlife habitat, including thinning as required in Zone 2. Modification from Policy 4.79 may be made upon the finding that strict application of this policy would result in a taking of private property for public purposes without just compensation.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.81: If fuel modification is required by the Fire Marshal, a fuel modification plan will be required to be submitted to the City as part of the application for any development located in WUI Fire Hazard Severity Zones (Exhibit 4-7). Applications shall include a site plan describing and quantifying the potential thinning, pruning or removal of brush, if any, that would be required to provide fire safety for the project or would be needed to accommodate any/all project elements.

Policy 4.82: All discretionary permit applications for projects in the City’s WUI shall be required to include landscape plan that has been prepared in accordance with the County of San Diego “Suggested Plant List for a Defensible Space” <http://www.sdcountry.ca.gov/pds/docs/DPLU199.pdf> and planting guidelines emphasizing the use of fire-resistant, native, non-invasive, drought-tolerant and salt-tolerant species. These plants grow close to the ground, have a low sap or resin content, grow without accumulating dead branches, needles or leaves, are easily maintained and pruned. Any new vegetation planted must meet Planning Department guidelines.

Policy 4.83: Any required thinning of flammable vegetation in the WUI shall be conducted by hand crews between September 15 through February 15. To minimize impacts to habitat, sensitive plant species will not be thinned or removed. Sensitive species such as *Quercus Dumosa* (Coastal Scrub Oak), *Ceanothus Verrucosus* (Coastal White Lilac), *Arcto staphylos Glandulosa* (Del Mar Manzanita) and *Corethrogyne Filaginifolia* var. *Linifolia* (Del Mar Sand-Aster) will not be thinned or disturbed in any way.

6. Emergency Actions and Response

Policy 4.84: The City Manager or his/her designee may grant an emergency permit, which shall include an expiration date of no more than one year and the necessity for a subsequent regular CDP application, if the City Manager or his/her designee finds that:

- (1) An emergency exists that requires action more quickly than permitted by the procedures for a CDP and the work can and will be completed within thirty (30) days unless otherwise specified by the terms of the permit.
- (2) Public comment on the proposed emergency action has been reviewed, if time allows.
- (3) The work proposed would be consistent with the requirements of the certified LCP.
- (4) The emergency action is the minimum needed to address the emergency and shall, to the maximum extent feasible, be the least environmentally damaging temporary alternative.

CHAPTER 4—HAZARDS & SHORELINE / BLUFF DEVELOPMENT

Policy 4.85: An emergency permit shall be valid for 60 days from the date of issuance unless otherwise specified by the City Manager or his/her designee, but in no case more than one year. Prior to expiration of the emergency permit, if required, the permittee must submit a regular, CDP application for the development even if only to remove the development undertaken pursuant to the emergency permit and restore the site to its previous condition.

Policy 4.86: All emergency permits shall be conditioned and monitored to insure that all authorized development is approved under a regular coastal development permit in a timely manner, unless no follow up permit is required.

Policy 4.87: Maintain the permit tracking and monitoring system to identify and prevent the illegal and unpermitted construction of bluff retention devices as a component of the code enforcement program.