Draft

LOCAL COASTAL PLAN POLICIES RELATING TO SEA-LEVEL RISE ADAPTATION

Pacifica, CA

Prepared for
City of Pacifica

November 2018

Near-king tides and high surf at Beach Boulevard on November 30, 2017 (J. Jackson)

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Prepared for
City of Pacifica

November 2018

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List of Definitions

Best Available Science. Best available science shall mean the most recent peer-reviewed science reasonably validated by qualified experts in the scientific community, and as may be recommended by the State of California or other authoritative coastal management entity (e.g. NOAA).

Hazard Zone. "Hazard zones" shall mean the areas shown on the City's maps prepared for the Pacifica SLR Vulnerability Assessment (1/12/2018), incorporated herein, and as may be amended from time-to-time based on updated best available science about projected sea-level rise, erosion, flooding, and other coastal hazards.

New Development. "New Development" shall mean the act or process of creating a structure or use where no existing structures or use occurs.

Summary

This memo presents recommended Local Coastal Program (LCP) policies to address projected sea level rise and its potential impact on coastal development and resources within the City of Pacifica. The following policy update is consistent with the recommended adaptation strategies from the Final Draft Adaptation Plan, City Council goals, and community input. These policies recognize that sea level rise projections are continually evolving and the effectiveness of hybrid adaptation strategies is not well known. ***Therefore, consistent with the City Council's goals, particularly to preserve existing neighborhoods and promote environmental justice and local economic vitality, the policies focus on protection and armoring of the shoreline and reassessment of the adaptation plan in the future.*** With Council's directions, the adaptation policies will be incorporated into a Draft LCP. The entire Draft LCP will be returned to the Planning Commission and City Council for consideration and approval to send to the Coastal Commission for certification. Only when the LCP is certified by the Coastal Commission and then adopted by the City Council will these policies become effective.

The City has grappled with the impacts of shoreline erosion and coastal flooding for decades, especially in north Pacifica, generally north of Mori Point, but also Rockaway, Linda Mar and Pedro Point. Most of the city's shoreline development pre-dates Proposition 20 and the Coastal Act, making it eligible for shoreline protection under state law. Since the early 1970s many of the properties north of the Pacifica pier have been armored with rock revetments and seawalls. At the same time, the high, sandy bluffs of Pacifica present difficult engineering challenges. Since the

late 1990s a dozen homes and three apartment buildings along Esplanade Ave could not be saved and have been removed. Several reinforced concrete seawalls and rock revetments have failed and been repaired to varying degrees. Coastal storms are also already extremely hazardous along Beach Boulevard; and homes in the Sharp Park and Linda Mar neighborhoods are subject to flooding from the sea, stream and storm runoff, and rising groundwater. Coastal access is limited north of the pier where shore erosion has met the armoring, causing ephemerally narrow to non-existent beaches. While Rockaway Beach is also mostly armored, the main beach at Linda Mar continues to be an important recreational resource. The recent damages and loss of coastal resources indicates an existing problem that will become progressively worse regardless of the amount of sea-level rise.

LCP Background

Pacifica's LCP guides development and protects coastal resources within the Coastal Zone. LCPs must be consistent with the California Coastal Act of 1976, as amended. Pacifica's LCP is made up of two parts: the Land Use Plan (LUP; a compilation of goals, policies, and recommended programs) and the Implementation Plan (regulations and zoning district maps that implement the provisions of the Land Use Plan) (City of Pacifica, 1980; 1994 as amended) The Implementation Plan has been codified into Pacifica's municipal code as individual sections (Chapter 4, Articles 43 and 44) in Title 9 Planning and Zoning (City of Pacifica, 1994 as amended).

The California Coastal Act aims to protect coastal resources, including to ensure that public access to and along the shoreline is provided and maintained; that water quality, marine life, and environmentally sensitive habitat areas are protected; and that coastal visual resources and special communities are preserved. The Coastal Act also calls for certain land uses within the Coastal Zone to have priority over other uses: recreation and visitor-serving uses, fishing, boating, and other coastal-dependent uses, and public works needed to support priority uses.

Pacifica's current Land Use Plan was certified in 1980. The Land Use Plan includes the following main sections:

- The California Coastal Act policies in effect at the time the Land Use Plan was adopted
- Land use designation maps organized by neighborhood, and land use designation definitions
- Neighborhood map of six coastal neighborhoods
- A detailed description of existing conditions, development criteria, and coastal access policies for each coastal neighborhood
- A detailed description of each existing or proposed beach access point
- Policies addressing a range of topics, including habitat protection, geotechnical hazards, coastal views and viewsheds, housing, etc.

Pacifica's current Implementation Plan was adopted in 1994 (and has been amended as recently as 2017) and establishes regulations that address permit requirements and procedures for development in the coastal zone. It also creates a Coastal Zone Combining District that serves as an overlay to the underlying zoning districts, to protect sensitive coastal resources, ensure public

shoreline access, protect environmentally sensitive habitats, address geotechnical suitability, grading and drainage, and shoreline protection, and maintain coastal view corridors and neighborhood commercial districts.

In 2009, the City of Pacifica initiated a comprehensive update to its General Plan and LCP. A draft LCP Land Use Plan was prepared that includes background information and policies for the following themes: land use and development, public access and recreation, environmental and scenic resources, and natural hazards (City of Pacifica, 2014). However, no enacting decision was made on the draft LCP.

Subsequently, California Senate Bill 379 was passed and required all cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans upon the next revision beginning January 1, 2017. The Governor's Executive Order No B-30-15 also directed state agencies to factor climate change into planning decisions. This order has been promulgated by the Coastal Commission to be included in Local Coastal Plan updates. The City Council will determine the most appropriate policies for Pacifica, then the LCP Update will be forwarded to the Coastal Commission for certification.

PROPOSED UPDATED LAND USE PLAN COASTAL HAZARDS POLICIES

General Policies

Hazard Policy 1 (Key Coastal Act Policies).

The City of Pacifica adopts the following key policies derived from the Coastal Act to address coastal hazards:

> ***PRC 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.*
>
> ***PRC 30253**. New development shall: (1) minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (2) 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; and,*

The updated LCP and sub-area adaptation policies adopted herein are intended to achieve and are consistent with these key policies, subject to periodic updating as resource and development monitoring and program implementation may dictate.

Hazard Policy 2 (Sea-level Rise and Best Available Science).

Planning and development reviews in the City of Pacifica shall use, as applicable, the best available science about projected sea-level rise and other climate-change related environmental changes when addressing coastal erosion, bluff failure, flooding and other coastal hazards.

Hazard Policy 3 (Hazard Identification and Mapping).

The City's coastal hazard zones shall be mapped based on the best available science about projected sea-level rise, erosion, flooding, and other coastal hazards. Mapping shall be updated as necessary to guide implementation of the LCP's hazard policies. Notwithstanding the coastal hazard zone maps, site-specific hazard mapping and assessment may be required as part of the individual development review process.

Coastal Hazards and Sub-area Adaptation Policies

Hazard Policy 4 (Sea-Level Rise Adaptation Plan).

The City shall implement its Sea-level Rise Adaptation Plan (Appendix A) as expressed in the LCP's general and sub-area coastal hazard adaptation policies. The City shall monitor implementation and, consistent with Hazard Policy 6, update the Sea-level Rise Adaptation Plan to strengthen public safety, preserve existing neighborhoods, assure local economic vitality, respond to climate change, promote environmental justice, implement the Coastal Act and protect the public trust.

Development in coastal hazard zones may be approved consistent with the sub-area policies (16– 43) if the following findings can be made:

a. The proposed development is sited and designed to minimize coastal hazards and impacts to coastal resources to the extent feasible, consistent with the Adaptation Plan;

b. All project impacts are mitigated to the maximum extent feasible through the City's Shoreline Mitigation Program (Hazard Policy 7) or consistent with Hazard Policy 60.

c. The project does not pose unacceptable risks to life or property or otherwise create a nuisance; and

d. The project will not encroach on public trust lands.

Hazard Policy 5 (Monitoring Shoreline Change).

The City shall implement a monitoring program for sea-level rise, beach width, bluff offset, flooding and storm damage, and other potential measures or triggers for guiding implementation of the LCP's sea-level rise adaptation policies. The monitoring program shall include yearly (minimum) shoreline and bluff edge surveys and also establish thresholds for reassessing the City's Adaptation Plan.

Hazard Policy 6 (Sea-level Rise Adaptation Plan Update)

The City shall reassess its Sea-level Rise Adaptation Plan as expressed in the LCP general and sub-area coastal hazard adaptation policies every five years or sooner as required by the shoreline monitoring program (Hazard Policy 5). The reassessment shall consider the following:

- *Efficacy of Adaptation Plan and implemented measures*
- *Updated sea level rise projections and risks.*
- *Potential need to revise adaptation measures or implement new measures, including review of emerging engineering, science, and technologies.*
- *Funding needs and potential funding sources.*

Hazard Policy 7 (Shoreline Mitigation Program).

Within three years of certification of the LCP Land Use Plan update, the City shall adopt a Shoreline Mitigation Program to address the coastal resource impacts of existing and future shoreline protection projects in the City. Special emphasis shall be placed on maintaining beaches and public access to and along the shoreline. The program will update the public access inventory of the LCP as necessary, include a coastal resource inventory and identify priority improvements for maintaining and enhancing coastal shoreline resources, particularly public access and recreation. The program will include enforceable measures to achieve proportional mitigation of resource impacts identified in shoreline protection projects. The program will identify potential funding sources for implementation of identified improvements. The program will include provisions for monitoring implementation and program updates as necessary.

Hazard Policy 8 (Adaptation Funding).

The City will research and evaluate feasible grant funding sources or new funding mechanisms, such as the formation of Geologic Hazard Abatement Districts (GHADs), or securing FEMA and other federal or state adaptation and hazard mitigation funds, to finance adaptation strategies for public infrastructure.

Hazard Policy 9 (Transfer of Development Rights).

Use the City's transfer of development rights (TDR) ordinance to relocate development rights from coastal hazard zones (sending sites) to receiving sites outside of hazard zones. Identify areas where densities and heights may be increased using TDR credits, including to facilitate affordable housing.

Hazard Policy 10 (Critical Transportation Infrastructure).

The City will pursue opportunities to preserve and protect critical local transportation infrastructure to mitigate against isolation, economic loss and ensure public safety.

Hazard Policy 11 (Hazard Prone Infrastructure).

The City will preserve, protect, or relocate hazard prone infrastructure to maintain critical services and maintain the environment.

Hazard Policy 12 (Business Outreach).

The City's Economic Development Department shall provide assistance (non-financial) to businesses in evaluating options to promote business resiliency.

Hazard Policy 13 (High Water Program).

The City will research and evaluate feasible new funding mechanisms to implement a program to record high water marks where feasible following high-water events.

Hazard Policy 14 (Flood Ordinance Consistency).

Review and amend as necessary the City's flood damage prevention ordinance to assure consistency with the updated policies and ordinances of the LCP.

Hazard Policy 15 (LHMP Alignment).

Coordinate City departments and programs to align the Local Hazard Mitigation Plan (LHMP) with the LCP to ensure proactive, coordinated and streamlined adaptation efforts and response to future coastal hazards. Leverage FEMA funding opportunities for hazard mitigation and other related funding mechanisms to implement the Sea-Level Rise Adaptation Plan as expressed in the LCP's general and sub-area coastal hazard adaptation policies.

Sub-Area Policies and Programs

The following policies and programs implement the near-term sea-level rise adaptation priorities for each sub-area in Pacifica, and identify mid- and longer-term measures, subject to feasibility and monitoring concerns. These priorities were developed based on existing conditions and existing/near term vulnerabilities for each sub-area, as well as the City's adopted goals for the project that include protecting existing development as well as preserving and enhancing coastal access along Pacifica.

As required in Hazard Policy 5, the City shall monitor erosion, flooding, and sea-level rise amount into the future to identify triggers for future adaptation measures beyond initial actions required due to existing conditions. Where applicable, specific triggers are clarified in the policies.

Generally, for all lands within the 2050 Pacific Institute erosion hazard zone, utilities, roadways and other public infrastructure should be floodproofed unless other adaptation alternatives are implemented and performing well. The City should incentivize risk reduction (floodproofing etc.) that property owners can invest in, with grant funding or code updates. In addition, the City should consider floodproofing infrastructure that may be currently exposed to coastal erosion and flooding to reduce the consequences of under-performance of protection measures (construction and maintenance of shoreline structures).

Managed retreat is not included in any of the near-term policies. Managed retreat would be reconsidered in the mid- to long-term if feasibility and monitoring warranted, as detailed in Hazard Policy 5 and Hazard Policy 6.

Fairmont West

The roadway and utilities in Fairmont West are at risk after one to two feet of sea-level rise. Some beach width may exist for access and other coastal resources, but given the high bluffs here, there is not adequate vertical access to the beach. Due to the undeveloped conditions of the

bluffs in this sub-area, armoring is not required immediately. Beach nourishment, while a lower priority for this sub-area compared to other more developed sub-areas in the City, could take place at a later date with a larger volume of sand. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased.

Hazard Policy 16 (Shoreline Structures: 0-1 foot SLR or 260-foot offset from bluff toe to infrastructure).

Shoreline structures shall be avoided except that the existing shoreline structures may be maintained and expanded to protect existing development in danger from erosion if found to be the least environmentally-damaging alternative, impacts are fully mitigated consistent with Hazard Policy 4, and any prior permit conditions or legal obligations pursuant to the California Coastal Act are addressed. Allow shoreline structures for the public road and sewer line if necessary. Any new blufftop development shall comply will all LCP setback policies.

Hazard Policy 17 (Beach Nourishment: 2 feet SLR or 260-foot offset from bluff toe to infrastructure)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (see artificial headlands concept in the Adaptation Plan), to reduce shoreline structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Repeat as necessary. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 18 (Transfer of Development Credits: ongoing).

Provide an option to private landowners to voluntarily transfer development potential as supported by Hazard Policy 9.

West Edgemar and Pacific Manor

Built assets and property are at risk from bluff erosion where un-armored now. Much of the armored areas may be overwhelmed by waves with as little as one foot of sea-level rise, due to scour and structure sloughing, increased wave loads and overtopping of the structure. Beaches tend to exist in pockets, with armoring impeding lateral access from the degraded vertical access ways. Beach access is limited in West Edgemar and Pacific Manor.

Hazard Policy 19 (Shoreline Structures: 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development).

Maintain and expand shoreline structures to protect existing public infrastructure, including between Bill Drake Way and Manor Drive. Allow private property owners to maintain existing or construct new shoreline structures, consistent with prior permit conditions or legal obligations pursuant to the California Coastal Act. Limit authorization of all new shoreline structures to twenty years or 2040, whichever is sooner, and require mitigation of beach,

public access and recreation and other resource impacts, consistent with Hazard Policy 7 or Hazard Policy 60 as necessary. Consider reauthorization subject to beach monitoring and implementation of beach nourishment and other strategies to maintain beaches.

Hazard Policy 20 (Beach Nourishment: 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (artificial headlands concept), to reduce shoreline structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Mitigate all adverse impacts and monitor effectiveness over time.

Northwest Sharp Park

The backshore of Northwest Sharp Park is armored but may be overwhelmed by waves with as little as one foot of sea-level rise, due to scour and shoreline structure sloughing, increased wave loads and overtopping of the shoreline structure. Beaches tend to exist ephemerally in pockets, with armoring impeding lateral access from the degraded vertical access ways. Existing property and infrastructure are at risk from coastal erosion so actions should be taken soon. A public access improvement plan should be provided, consistent with the City's Shoreline Mitigation Program (Hazard Policy 7). Due to the potential lead time of establishing a sand source, beach nourishment planning should begin immediately. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased. The effectiveness of beach nourishment will need to be monitored and, if/when erosion continues to threaten existing development or infrastructure, new adaptation measures will need to be assessed.

Hazard Policy 21 (Shoreline Structures: 0-1 feet SLR or 70-foot offset from bluff toe to development or infrastructure).

Private land owners may maintain and expand shoreline structures to protect existing development in danger from erosion, consistent with Hazard Policy 4 and any prior permit conditions or legal obligations pursuant to the California Coastal Act.

Hazard Policy 22 (Beach Nourishment: 0-2 feet SLR or 70-foot offset from bluff toe to development or infrastructure)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (artificial headlands concept), to reduce shoreline structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Repeat as necessary. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 23 (Flood Protection: 1 feet SLR).

Enable property owners to modify development structures to manage impacts of wave run-up and overtopping of bluff face.

Sharp Park, West Fairway Park and Mori Point

Most of this area is armored. The northern section between the pier and Paloma is subject to frequent wave overtopping and damage to homes has occurred. Beaches are narrow and ephemeral, with armoring impeding lateral access from the degraded vertical access ways. South of the pier, the beach tends to be more persistent and wider, and there is usually an accessible beach in the vicinity of the end of Clarendon, with reliable vertical and lateral beach access. South of Clarendon to Mori Point, the beach persists although wave run-up can reach the levee and there is some armoring. This sub-area is exposed to flooding due to rainfall runoff which cannot flow directly to the ocean. The Clarendon area is exposed to flooding now, and certain parts of the West Fairway development may be exposed to flooding if sea-level and ground water levels rise over 3 feet. Due to the potential lead time of establishing a sand source, beach nourishment planning should begin immediately. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased.

Flood protection is already needed for homes and businesses along Clarendon Avenue during rain events and will need to be improved around the SPGC to manage flooding of Laguna Salada regardless of the condition of the SPGC berm. San Francisco is expected to maintain the SPGC berm which protects the Sharp Park neighborhood from the coastal flooding source, but existing pumping facilities in SPGC are not designed to mitigate flooding in and around the course during significant rainfall events (i.e., a portable pump station is currently used to manage rainfall-runoff flooding along Clarendon Avenue). The priority recommendations for flood protection surrounding SPGC are therefore based on the rainfall (fluvial) flood source, but would also be effective during a major coastal storm if the SPGC berm is overtopped or breached. Flooding due to wave run-up landward of Beach Boulevard seawalls is already an issue. Monitoring of the existing seawalls against the higher sea-levels will be necessary (Hazard Policy 5). Results of the monitoring will be considered during the Sea-Level Rise Adaptation Plan Update to determine if additional flood protection adaptation measures are necessary.

Hazard Policy 24 (Sharp Park Golf Course).

Encourage the City of San Francisco to maintain the Sharp Park Golf Course berm and armoring, consistent with coastal development permit 2-17-0702; support adaptation planning for the course, and protect public access.

Hazard Policy 25 (Shoreline Structures: 0 feet SLR).

Maintain and expand shoreline structures to protect public infrastructure. Extend the Beach Boulevard seawall to the Sharp Park Golf Course berm.

Hazard Policy 26 (Structure Elevation: 0-2 feet SLR).

Upgrade existing shoreline structures to limit wave overtopping unless beach nourishment strategies are effective in reducing wave run-up on the backshore. Elevate development structures as necessary to mitigate flood damage, consistent with existing height limitations. Elevations of wave run-up and associated development thresholds shall be determined via a site specific study.

Hazard Policy 27 (Beach Nourishment: 0-1 feet SLR).

Pursue beach nourishment and sand retention structures to reduce shoreline protection maintenance requirements and provide beach resources. Encourage the City of San Francisco to nourish the beach fronting the Sharp Park Golf Course berm to maintain beach widths.

Hazard Policy 28 (Flood Protection: 0 foot SLR).

Evaluate and construct appropriate flood protection measures, which may include a Clarendon Avenue stormwater basin, pump station, and/or interior SPGC levee, to protect homes and businesses from existing fluvial storm flood hazard zone.

Hazard Policy 29 (Flood Protection: 3 feet SLR).

Evaluate the future need to construct a West Fairway Park stormwater basin, pump station, and interior SPGC levee to protect western homes from future coastal/fluvial flood hazard zone.

Rockaway Beach, Quarry and Headlands

The armoring near the end of Rockaway Blvd is overtopped by waves under present conditions, with occasional damages. Hence, this area has very little capacity and will have a noticeably degraded condition with as little as one foot of sea-level rise. There is no beach in this area, with waves crashing directly into the armor structures. The shore becomes more accessible with distance northward but will also be more limited with as little as 1 foot of sea-level rise. The south end of rockaway is unarmored, has a persistent beach and the backshore is estimated to be impacted with about 2 feet of sea-level rise.

Due to the cove configuration of Rockaway Beach, it is a great candidate for beach nourishment. Policies recommend that Rockaway be used as a pilot project for beach nourishment in Pacifica. In the pilot project, the City will go through the overall process for beach nourishment and identify available sources in the region and corresponding sediment characteristics and costs, evaluate the performance of the nourishment and enable the City to reevaluate nourishment along northern Pacifica and perform a more thorough assessment for a larger scale nourishment project.

Hazard Policy 30 (Shoreline Structures: 0 feet SLR).

Existing public shoreline structures along the north cove shall be upgraded for public safety and hazard reduction.

Hazard Policy 31 (Shoreline Protection: 2-3 feet SLR, or when backshore toe is 100 feet from Highway 1).

Coordinate with Caltrans to evaluate the need for a revetment or other appropriate shoreline protection for the Highway 1 embankment.

Hazard Policy 32 (Public Access: 0 feet SLR).

Plan and provide for enhanced public access, consistent with the City's Shoreline Mitigation Program (Hazard Policy 7).

Hazard Policy 33 (Beach Nourishment/Public Access: 0 feet SLR).

Plan and implement beach nourishment for Rockaway Beach. Monitor and measure performance and any reduction of shoreline structure maintenance needs. Establish mechanisms through the City's Shoreline Mitigation Program (Hazard Policy 7) to receive and use beach impact mitigation monies from other sub-areas of the City.

Hazard Policy 34 (Development Setbacks: ongoing).

Implement new development shoreline setbacks consistent with Hazard Policy 45.

Hazard Policy 35 (Transfer of Development: ongoing).

Evaluate and implement as feasible a transfer of development credit program for private property at the Headlands as supported by Hazard Policy 9.

Pacifica State Beach & West Linda Mar

Adaptation policies for Pacifica State Beach and West Linda Mar are presented together because actions taken at Pacifica State Beach influence coastal hazard exposure to West Linda Mar. Much of the Pacifica State Beach sub-area has a persistent, relatively wide beach with bulkheads in the south transitioning to dune fields in the north. Hence, this shore and roadway can likely withstand at least 2 feet of sea-level rise. However, the West Linda Mar sub-area east of Highway 1 has a low elevation and is subject to flooding from high creek flows and rising groundwater associated with sea-level rise. Due to the existing beach widths at Pacifica State Beach and existing coastal armoring, armoring actions are not a near term priority. However, conditions of existing armoring at the Anza pump station should be monitored to ensure protection in the near term. Nourishment of Pacifica State Beach should be initiated using the shoreline-backshore offset for the main parking lot. Beach nourishment projects should include dune restoration to maintain ecology, protect the sewer force main that is buried in existing dune field north of the main parking lot/Anza pump station as well as provide flooding protection of Highway 1 and West Linda Mar. Pump stations at Pacifica State Beach are vulnerable to wave run-up and require floodproofing in place. West Linda Mar neighborhood is also vulnerable to flooding from San Pedro Creek based on existing FEMA hazard maps and will become more vulnerable as SLR increases the flood levels in the creek via its ocean boundary condition. The West Linda Mar neighborhood was constructed in a former lagoon and experiences groundwater issues in the lowest areas, which is evident by existing wetlands around the skate park and homes furthest west. Groundwater in low

areas near the ocean are directly influenced by the sea-level, and thus groundwater issues will increase with SLR.

Hazard Policy 36 (Shoreline Protection: 2 ft SLR or 100 foot offset from shoreline to infrastructure).

Evaluate beach conditions and consider future shoreline protection to protect parking and the Linda Mar pump station as necessary.

Hazard Policy 37 (Highway One Protection).

Coordinate with Caltrans to evaluate options for protecting Highway 1, if necessary.

Hazard Policy 38 (Beach Nourishment: 2 ft SLR or 100 foot offset from shoreline to infrastructure).

Evaluate beach conditions and implement beach nourishment as necessary to maintain 100-foot buffer seaward of the sewer force main and/or Highway 1. Repeat nourishments as needed.

Hazard Policy 39 (Flood Protection: 0 feet SLR).

Analyze need for floodwall along commercial property to manage flooding from San Pedro Creek under existing conditions with SLR allowance. Future flood studies that include climate-driven changes in precipitation should inform any floodwall design. Floodproof Anza pump station (stormwater) to mitigate existing coastal storm flooding vulnerabilities to wave run-up.

Hazard Policy 40 (Flood Protection: 2 feet SLR or 100-foot offset from shoreline to infrastructure).

Floodproof the Linda Mar pump stations (sewer and stormwater) to mitigate future coastal storm flooding vulnerabilities to wave run-up as necessary.

Hazard Policy 41 (Groundwater Management: 0-2 feet SLR).

Begin groundwater monitoring to determine needs for dewatering wells in the lowest portions of the West Linda Mar neighborhood.

Pedro Point and Shelter Cove

Potential bluff erosion may reach the most seaward bluff top homes at Pedro Point by about 2050 with 1 to 2 feet of sea-level rise. Private property is mostly armored along the water (boat docks/homes) but require upgrades by property owners, while bluff top properties have limited ability to prevent bluff toe erosion due to parcel limits. Private property is vulnerable to bluff erosion, but implementing bluff toe armoring would be complicated due to land ownership

Hazard Policy 42 (Shoreline Structure Upgrades).

Allow replacement and upgrades of existing shoreline structures to reduce hazards and resource impacts. Mitigate impacts consistent with the City's

Shoreline Mitigation Program (Hazard Policy 7) or Hazard Policy 60 as necessary.

Hazard Policy 43 (Flood Protection: 0-1 feet SLR).

Allow private property owners to raise homes and other development structures above wave run-up hazard, consistent with height limitations.

Standard Policies for New Shoreline Development

Hazard Policy 44 (Technical Reports).

New Development proposed on the shoreline shall include coastal engineering, geomorphology and other relevant technical reports unless on-site hazards already identified in a recent hazard map or assessment are adequate for evaluating and ensuring compliance with the LCP, including through use of permit conditions to address any uncertainty. Reports shall be prepared by a licensed civil engineer or other suitably qualified professional; use the best available science; consider the impacts from the med-high projection (CalNRA & OPC 2018) of sea-level rise for the anticipated duration of the proposed development; demonstrate that the development will avoid or minimize impacts from coastal hazards; and evaluate the foreseeable effects that the development will have on coastal resources over time. Reports may be waived for temporary events, temporary development structures or other minor, short-term development where it is clear there will be no significant hazard risks over the project's life.

Hazard Policy 45 (Siting and Design).

New development on vacant shoreline property shall be sited and designed to be safe from erosion, bluff failure, wave runup, flooding and other coastal hazards for at least 100 years without new shoreline protection, considering projected sea-level rise and other climate change effects to be determined from best available science and current guidance at the time of proposed development. Permit approvals shall prohibit shoreline protection for the authorized development, require the property owner to record an acknowledgement that the development does not qualify as a development structure entitled to shoreline protection under Coastal Act Section 30235 and a waiver of any rights to such protection, and where necessary require a removal and restoration plan, including bonding for large projects, to avoid future shoreline protection or project failure.

Hazard Policy 46 (Assumption of Risk by Private Landowners).

Permit approvals of development on the shoreline shall require the applicant to record a deed restriction requiring the owner to indemnify and hold the City harmless and make other acknowledgments relating to the risks relating to the property.

Hazard Policy 47 (MHTL and Avoidance of Public Trust Lands).

Applications for low-lying development adjacent to coastal waters shall include a Mean High Tide Line (MHTL) survey of the development site prepared by a licensed professional land surveyor based on field data collected within 12 months of the application submittal (may be based on City monitoring survey data if collected by a licensed professional land surveyor). The survey shall be conducted in consultation with and approved by the California State Lands Commission (CSLC) staff. Development shall be sited to avoid public trust lands for the approved duration, unless otherwise authorized by the California State Lands Commission and Coastal Commission. New MHTL surveys shall be submitted every ten years or within one year of a new tidal datum epoch (an epoch is a 19-year tidal cycle used to calculate datums), seismic event in the project area greater than 5.5, or significant relative rise in annual local mean sea-level records.

Hazard Policy 48 (Bluff Face Development).

Shoreline structures, grading, and landform alteration on bluff faces are prohibited, except for the following: public access structures where no feasible alternative means of public access exists, and shoreline protective devices if otherwise allowed by the LCP and the public access and recreation policies of the Coastal Act. Such shoreline structures shall be designed and constructed to be visually compatible with the surrounding area to the maximum extent feasible and to minimize effects on erosion of the bluff face.

Hazard Policy 49 (Minor Development in Shoreline Areas).

Minor and/or ancillary development, including public trails, benches, gazebos, patios, etc., may be located seaward of a bluff or shoreline setback line provided that development is otherwise consistent with the LCP, does not create a hazard, and does not use a foundation that can serve as a bluff retaining device, such as caissons, or that requires landform alteration, and that the development is removed or relocated by the landowner when threatened or in the event that portions of the development fall to the bluffs, beach or ocean.

Hazard Policy 50 (Non-conforming Structures in Shoreline Areas).

When the expansion or redevelopment of an existing development structure that is legally non-conforming with an LCP standard, including bluff setbacks or other hazard criteria, is proposed, the new construction shall be made to conform with the LCP and, if applicable, the Coastal Act. The degree of non-conformity shall not be increased.

Hazard Policy 51 (Protection of Private Property in Hazardous Areas).

Where full adherence with all LCP policies, including for setbacks and other hazard avoidance measures, would preclude a reasonable economic use of the property as a whole, the City may allow the minimum economic use and/or development of the property necessary to avoid an unconstitutional taking of private property without just compensation. There is no taking that needs to be avoided if the proposed development constitutes a nuisance or is otherwise prohibited pursuant to other background principles of property law (e.g., public

trust doctrine). If development is allowed pursuant to this policy, it must be consistent with all LCP policies to the maximum extent feasible.

Hazard Policy 52 (Habitat Sea-level Rise Migration Buffers).

A sea-level rise buffer area shall be added to required new development habitat buffers if necessary to allow for the migration of wetlands and other shoreline habitats caused by sea-level rise over the anticipated duration (economic life) of the development. Habitats include all wetlands, riparian, intertidal/shoreline and terrestrial ESHAs as defined by the Coastal Act. The sea-level rise projection considered shall be determined for the type of development from CalNRA and OPC (2018) guidance or the latest update. Except for temporary uses, as described below, uses and development within sea-level rise buffer areas shall be limited to minor passive recreational uses, with fencing, de-siltation or erosion control facilities, or other improvements deemed necessary to protect the habitat, to be located in the upper (upland) half of the buffer area. Water quality features such as drainage swales required to support new development shall not be constructed in wetland buffers. Temporary uses may also be placed in the sea-level rise buffer area until such time as sea-level rise causes the wetlands or other shoreline habitat to migrate to within 100 feet of the temporary uses, at which time, they shall be removed. All permanent habitat and buffers identified shall be permanently conserved or protected through a deed restriction, open space easement or other suitable device.

Hazard Policy 53 (Stormwater and Dry Weather Flows).

New development shall provide adequate drainage and erosion control facilities that convey site drainage in a non-erosive manner to minimize hazards resulting from increased runoff and erosion. Runoff shall be directed inland to the storm drain system or to an existing outfall, when feasible. If no storm drain system or existing outfall is present, blufftop runoff shall not be channelized or directed to the beach or the ocean.

Hazard Policy 54 (Reduction of Greenhouse Gases).

New development shall include solar panels and, as appropriate, other energy reducing techniques to minimize greenhouse gas emissions, consistent with community character, coastal views and protection of biological resources.

Standard Policies for Shoreline Structures

Hazard Policy 55 (Soft Shoreline Protection).

Encourage the use of soft or natural shoreline protection methods, such as dune restoration and beach/sand nourishment as alternatives to hard shoreline protective devices. Soft shoreline protection devices shall be fully evaluated for coastal resource impacts, and shall only be approved if found consistent with the LCP policies related to shoreline protection. Consider combining beach replenishment with groin construction to maintain beaches and protect development (see subarea policies).

Hazard Policy 56 (Beach Nourishment).

In coordination with the Coastal Commission and other permitting agencies (e.g., State Lands Commission, U.S. Army Corps of Engineers), the City shall develop and implement a beach nourishment program in conjunction with sand retention structures to assist in maintaining beach width and elevations, consistent with subarea policies. The beach nourishment program will include measures to protect water quality and to minimize and mitigate potential adverse biological resource impacts from deposition of material, including measures such as sand compatibility specifications, restrictions on volume of deposition, timing or seasonal restrictions, and identification of environmentally preferred locations for deposits. The City will also consider developing an opportunistic sand program and evaluate how replenishment options may need to change over time with sea-level rise.

Hazard Policy 57 (Existing Shoreline Structures).

Except as may be otherwise provided in the LCP subarea policies, legally permitted shoreline protection structures may be repaired and maintained until the development they are protecting is removed at which time the shoreline protection shall be reevaluated for consistency with the LCP. Repair and maintenance activities shall not result in any enlargement or extension of the shoreline structure, or any seaward encroachment or impairment of public trust resources, and shall provide mitigation for any new coastal resource impacts not previously or otherwise mitigated through the City's Shoreline Mitigation Program (Hazard Policy 7). Expansion, augmentation or replacement of 50 percent or more of the shoreline structure (by volume, linear (height or length) or areal extent) constitutes a new shoreline structure and shall comply with all policies of the LCP.

Hazard Policy 58 (New Shoreline Structures).

Unless a waiver of rights to shoreline protection applies on the property, shoreline protection structures, including revetments, breakwaters, groins, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted consistent with the LCP's sub-area policies when required to serve coastal-dependent uses or protect existing principal development structures or public beaches in danger from erosion, when designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and when there is no less environmentally damaging feasible alternative such as beach nourishment, non-structural drainage and native landscape improvements, or other similar non-structural options. For purposes of this policy "existing principal structures" means principal structures that were legally authorized prior to January 1, 1977.

Hazard Policy 59 (Authorization Limits of New Shoreline Structures, 30235; Coastal Act).

Unless otherwise directed in a subarea policy, shoreline protection structures shall only be authorized until the time when the existing principal development structure or adjacent development structures that are protected by such a device: 1) is no longer present or 2) no longer requires armoring.

Hazard Policy 60 (Mitigating Impacts of New Shoreline Structures).

Necessary shoreline structures shall be sited and designed to avoid sensitive resources to the maximum extent feasible. Adverse coastal resource impacts shall be fully mitigated, including impacts on sand supply, beach area, public access (vertical access to the shore and horizontal access along the shore and blufftop) and recreational use (surfing, fishing, hiking, etc.), public trust lands and values, ecological function, water quality, shoreline aesthetics, and cultural resources. At a minimum, new shoreline structures shall: blend with the natural environment; avoid significant habitat areas; minimize encroachment/footprint; protect, and where feasible, provide public access; and control erosion from surface and groundwater flows. Mitigation options shall include consideration of providing equivalent new public access, recreation, habitat or other coastal resource in the vicinity of the project, or if such options are not feasible, proportional in-lieu fees that consider and reflect, to the maximum extent practicable, the full value of lost resources for the approved lifetime of the project. Any fees shall be deposited in an interest-bearing account held by the City of Pacifica for use within the city limits for mitigation of the specific impact identified in the project approval. This policy may be met through compliance with the City's Shoreline Mitigation Program (Hazard Policy 7)

Hazard Policy 61 (Monitoring Plan for New Shoreline Structures).

Proposals for new, replacement or repaired shoreline protection structures shall include a monitoring plan that evaluates the condition of the shoreline structure, conditions at the site and surrounding area, and whether the shoreline protection structure is still needed for protection. The plan shall require an inspection at least every five years to identify: any structural damage and need for repair; environmental impacts, including excessive scour, impacts to shoreline processes and beach width (at the project site and the broader area and/or littoral cell as feasible), and impacts to public access and the availability of public trust lands for public use; and the status of the development structure being protected. At least every 15 years the landowner shall submit a new Mean High Tide Line (MHTL) survey of the Subject property based on field data collected within 12 months of the date submitted. Surveys shall comply with Hazard Policy 47.

Standard Policies for Coastal Flooding and other Hazards

Hazard Policy 62 (Flooding).

New development in flood hazard zones shall comply with the City's Flood Damage Prevention Ordinance.

Hazard Policy 63 (Flood Risk Reduction).

The City shall evaluate and pursue floodproofing of infrastructure and other development in danger from projected flooding by 2050. Allow and facilitate if feasible private owners to floodproof development structures, consistent with other LCP policies.

Hazard Policy 64 (Steep Slopes and Landslides).

New development shall minimize siting on steep slopes and in areas prone to land sliding. Development on slopes over 35% is prohibited unless detailed site investigations ensure that risks can be reduced to acceptable levels and that the structure will be protected for its design life.

Hazard Policy 65 (Seismic Hazards).

New development shall be sited and designed to minimize risks from seismic events. Buildings for human occupancy shall avoid surface traces of active faults, consistent with the Alquist-Priolo Act and other relevant state law.

Hazard Policy 66 (Tsunami Hazards).

New development shall consider and minimize risks from in identified tsunami run-up zones. Measures may include signage and education, evacuation plans, warning systems and other mitigations of tsunami risks.

Hazard Policy 67 (Bluff Drainage and Erosion).

The City will evaluate and research feasible new funding mechanisms to investigate areas that may be significantly contributing to groundwater flows to the bluffs and determine whether improving drainage and/or reducing irrigation could reduce bluff erosion. Measures to improve drainage and reduce over-watering shall be communicated to the public and property owners as part of existing water conservation outreach programs, and included as conditions on new development where applicable.

REFERENCES

California Coastal Commission (CCC) 2015. Sea-level Rise Policy Guidance Interpretive Guidelines for Addressing Sea-level Rise in Local Coastal Programs and Coastal Development Permits. Unanimously Adopted August 12, 2015.

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California Natural Resources Agency (CalNRA) and California Ocean Protection Council (OPC), 2018. State of California Sea-Level Rise Guidance: 2018 Update. Adopted March 2018.

City of Pacifica. 2014. City of Pacifica Local Coastal Land Use Plan. Prepared for City of Pacifica. Prepared by Dyett and Bhatia, DKS Associates, Economic and Planning Systems (EPS) and ESA. Available at: http://www.cityofpacifica.org/depts/planning/general_plan_update/default.asp. Accessed on January 11, 2018.

City of Pacifica. 1980. City of Pacifica Local Coastal Land Use Plan. March 24, 1980. Available at: http://www.cityofpacifica.org/depts/planning/. Accessed on January 11, 2018.

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Environmental Science Associates (ESA), 2017. Future Conditions Scenarios for Pacifica LCP Update, Memorandum. Prepared for the City of Pacifica, December 18, 2017.

Environmental Science Associates (ESA), 2018a. Sea-Level Rise Vulnerability Assessment. Prepared for the City of Pacifica January 2018, Revised June 2018.

Environmental Science Associates (ESA) 2018b. Final Draft Sea-level Rise Adaptation Plan. Prepared for the City of Pacifica. July 2018.

Appendix A

Final Draft Adaptation Plan (September 2018)

Due to the size of the document, the Final Draft Adaptation Plan is not included in this file. Please find a copy of the Final Draft Adaptation Plan online at www.cityofpacifica.org/sealevelrise. Alternatively find the document as Attachment C of the 11/19/2018 Planning Commission Staff Report.

Appendix B. Responses to Comments on Draft LCP Policies

On September 10, 2018, the City of Pacifica released the Draft Local Coastal Program (LCP) for public review and comment. The original public review period was scheduled to be September 10, 2018 to October 5, 2018, but on September 20th, the comment period was extended to October 8, 2018 in response to requests from the public.

Draft Local Coastal Program Policies Public Outreach

The City of Pacifica held three public meetings to discuss the Draft LCP Policies and the overall sea level rise planning effort that the City is conducting and to receive feedback. Each public meeting began with a presentation and ended with an opportunity for verbal questions and comments. Details of the public meetings are provided below:

Technical Work Group (Work group comprised of key federal, state, and local regulatory and resource agencies. The meeting was open to the public.)
September 13, 2018 at 2:00pm
Pacifica Community Center (540 Crespi Dr.)

Community Work Group (Work group comprised of selected community stakeholders. The meeting was open to the public.)
September 13, 2018 at 6:00pm
Pacifica Community Center (540 Crespi Dr.)

Public Workshop (Full public participation)
September 15, 2018 at 12:00pm
Pacifica Community Center (540 Crespi Dr.)

Work group members and the public were invited to submit written comments until the public review period closed on October 8, 2018. Written comments were accepted at the public meetings, via City email address (sealevelrise@ci.pacifica.ca.us), or via mailed to Bonny O'Connor, Planning Department at 170 Santa Maria Ave, Pacifica, CA 94044.

Overview of Comments

The City received 20 comments during the public comment period. Four comments from the Community Work Group and 16 comments from the public. Two Technical Work Group comments were received after the official close of the comment period and responses to these comments are included as well. Tables E-1 through E-3 lists the assigned comments numbers and the commenter associated with the letter.

Table B-1. Community Work Group Comments

Comment #	Commenter
CWG01	Gordon Tannura
CWG02	Jim Kremer
CWG02	Sam Casillas
CWG04	Ron Maykel

Table B-2. Technical Work Group Comments

Comment #	Commenter
TWG01	County of San Mateo, Office of Sustainability
TWG02	California Coastal Commission

Table B-3. Public Comments

Comment #	Commenter
P01	Amy Caplan
P02	Amy Caplan
P03	Amy Caplan
P04	Dan Peknik
P05	Leon Slick
P06	Jeff Guillet
P07	Amy Guillet
P08	Kau Talsky
P09	Jeff Guillet
P10	Jack Kerns
P11	Gil Anda
P12	Margaret Goodale
P13	Caroline Chiramberro
P14	Chaya Gordon
P15	F. Ribera
P16	Stan Zeavin

Community Work Group Comments

CWG01. Gordon Tannura

1. The Final Draft Adaptation Plan with Response to Comment is a support document that provides background analysis of a range of possible adaptation measure, their potential cost, potential benefits, and timing triggers. Using this background information, along with public input and Council adopted project goals, the Draft LCP Policies were developed. The adopted LCP Policies

will be the official direction that staff will implement. The City Council will be asked to consider the Final Draft Adaptation plan, as an Appendix to their approval of the entire LCP Update in 2019.

2. The public will have an opportunity to provide comments on the l Draft LCP Policies at the Planning Commission public hearing schedule on November 19, 2018.
3. Your comment is in the record.
4. A definition of "New Development" is provided in the Definitions section of the document.
5. Hazard Policy No. 6 will provide a regular opportunity for the City to reassess if the mapping of the hazard zones need to be updated based on sea level rise project or new engineering, science, and risks.
6. The intent of this policy recommendation, based on the analysis of the adaptation plan, is to assure the ability of the City to adapt based on how a shoreline structure or other measures, such as beach replenishment, perform, in order to maximize opportunities to avoid or minimize armoring over the long run. The 20 year time period reflects an approach that might reasonably be supported by the Coastal Commission.
7. The City of Pacifica does not have a role that preempts the City of San Francisco and the California Coastal Commissions jurisdictions, which would allow us to provide a more forceful or active role regarding the berm.
8. Revised to state that elevations of wave run-up shall be determined by a site-specific study.
9. Clarified that MHTL survey may rely on City monitoring data if collected by a licensed land surveyor. An epoch is a 19-year tidal cycle used to calculate datums.
10. The policy gives examples of minor or ancillary development. The Implementation Plan of the LCP could provide a definition or further elaborate on the definition but the intent is to identify development that is not considered a primary development and that could readily be relocated if endangered by erosion.
11. The buffer would be determined by best available science and projected sea level rise over the life of the development.

CWG02. James Kremer

1. Your comment is in the record.
2. Hazard Policy No. 5 states that "[t]he monitoring program shall establish thresholds for reassessing the City's Adaptation Plan". The monitoring plan could include lack of available funds as a trigger. Additionally, Hazard Policy No. 6 lists "Funding needs and potential funding sources" as consideration in the reassessment.
3. All of the policies presented will go into the LCP update, establishing a menu of adaptation options/requirements over time. The Policies are not presented in order of prioritizations. Implementation of the policies will be based on the results of the monitoring program described in Hazard Policy No. 5.
4. ESA prepared policies based on the direction from the City. Future work and services to implement the LCP Policies would likely exceed $10,000 and would therefore be required to go

through a competitive and formal bidding process in accordance with the City's Administrative Policy No. 76. Furthermore, contracts $50,000 and up would require City Council approval.

5. Please see the Planning Commission staff report for the November 19, 2018 public hearing.
6. Revisions were made in response to your comment.
7. A certified LCP Update would provide the City of Pacifica with the authority to issue most coastal development permits. Some decisions may be appealed to the Coastal Commission. The Coastal Commission does retain jurisdiction over public trust lands or tidelines, and may retain jurisdiction over sensitive lands. The CCC would likely consider the City's LCP policies during their review.
8. Your suggested edit was made.
9. The level of effort necessary to conduct a reassessment would be correlated to the amount of new information that is obtained within those 5-year (or less) periods on the topics that must be reassessed. In the event that minimal new information is developed, the reassessment process for that period would be minimal.
10. Your comment is in the record.
11. The triggers are detailed in the heading of the policies. For example, *Hazard Policy No. 16 (Shoreline Structures: 0-1 foot SLR or 260-foot offset from bluff toe to infrastructure* this policy should be triggered at 0 to 1 foot of sea level rise or when there is 260 feet from a from bluff toe to the infrastructure. Planning and permitting of the adaptation strategy should occur prior to the environmental trigger.
12. Please see response to comment CWG02-2.
13. Please see response to Comment CWG02-3.
14. A revision was made in response to your comment.
15. Your comment is in the record. Please see response to Comment CWG02-3.
16. Your comment is in the record.

CWG03. Sam Casillas

1. The Calson field and the Quarry are privately owned properties that are currently zoned for commercial development. Analysis of preferred zoning designations for particular property is outside the scope of these policies. While staff understands the Commenter's statement that the concept of using open space to mitigate flooding and storm surge is recommended by the California Natural Resources Agency and the Coastal Commission, the actual application of particular zoning designations for specific properties is beyond the scope of this planning effort.

CWG04. Ron Maykel

1. Your comment is in the record. It is true that bluff top and edge erosion may occur from other sources, which should be taken into account in any site specific study. This study only explored hazards due to coastal forces (wave run-up and erosion, sea level rise), but all sources of erosion should be considered in any project on the coast.

Technical Work Group Comments

TWG01. San Mateo County.

1. Your comment is in the record.
2. Your comment is in the record.
3. Hazard Policy No. 6 provides an opportunity to reassess adaption pathways if the proposed actions need to be updated.
   Indeed lead time should be included in a trigger-based approach to adaptation. Planning triggers should be evaluated to determine the proper time needed to prepare for action, then the planning lead time could be converted into a distance (for erosion issues) or a SLR amount based on a reasonable rate/projection (for flooding issues).
4. The recommended sea level rise projections were clarified and cited in the policies mentioned, either by scenario or 'best available science and guidance' as appropriate for the type of development considered.
5. The document and study is focused on coastal erosion, flooding and sea-level rise. The existing Draft LCP addresses landslides and tsunami hazards.
6. Revisions were made to Hazard Policy No. 4 in response to your comment.
7. Your comment is in the record.
8. Evaluation of adaptation measures is needed through time to understand what works and doesn't, but developing evaluation metrics is out of the study scope.
9. The transfer of development rights to non-hazardous areas will indeed require that the receiver area is outside of coastal hazard zones.
10. Your comment is in the record.
11. Your comment is in the record.
12. Your comment is in the record.
13. This requirement is included in Hazard Policy No. 45.
14. The triggers that you are suggesting would be defined in the monitoring program per Hazard Policy No. 5.
15. Your comment is in the record.
16. Your comment is in the record.
17. Your comment is in the record.
18. Your comment is in the record.
19. Your comment is in the record.
20. At a maximum, new MHTL surveys shall be conducted every 10 years.
21. Types of habitats are clarified in the policy.
22. Your comment is in the record.
23. The document and study is focused on coastal erosion, flooding and sea-level rise. Your comment is in the record.
24. The language is in the context of the Coastal Act.

25. Future updates to the coastal hazards projected for Pacifica will be used as the Adaptation Plan evolves in the future.

TWG02. California Coastal Commission

1. Your comment is in the record.
2. Your requested language was included in the Summary section of the document.
3. The City's proposed policies establish an adaptation strategy that initiates an initial evaluation of beach replenishment City-wide and the planning and implementation of beach replenishment at Rockaway Beach. This evaluation and planning effort, and subsequent permitting of any projects, is the appropriate time to develop project-level detail and analysis about the specific dynamics, feasibility and impacts of replenishment and sand retention structures in specific locations. Further, Hazard Policy No. 5 requires monitoring of shoreline conditions and triggers, including beach width (*e.g.*, 100 feet on average in certain subareas). In addition, Hazard Policies Nos. 4 and 6 require periodic evaluation of the efficacy of the adaptation strategy, including the identification of alternative strategies or measures, at least every five years. This updating of the adaptation plan would be triggered in the event that shoreline monitoring and beach replenishment has not gone forward as currently planned (for example, due to insufficient funding or other feasibility issues). Likewise, the policies provide a backstop for project-level evaluation and potential approval of new, expanded or maintained shoreline structures consistent with the requirements of Coastal Act 30235 (existing development in danger from erosion) including mitigation of impacts pursuant to Hazard Policy No. 4 and Hazard Policies Nos. 7 or 60. The LCP thus establishes an adaptation strategy trajectory supported by planning level analysis.
4. Hazard Policy No. 4(b) states that all development in hazard zones must mitigate impacts at the time of permitting, pursuant to Hazard Policy No. 7 or Hazard Policy No. 60: "b. All project impacts are mitigated to the maximum extent feasible through the City's Shoreline Mitigation Program (Hazard Policy No.7) or consistent with Hazard Policy No. 60." If the mitigation program is not in place, Hazard Policy No. 60 is controlling.
5. The City is happy to consider reorganizing and formatting of the LCP policies to facilitate maximum readability and public understanding. Further opportunity for such work will be provided when the Sea Level Rise policies are integrated with the larger LCP update in 2019. As explained above, the policies establish an adaptation strategy that must necessarily move in phases, contingent on funding and additional project-level analysis. In the meantime, the policies also are written so that the overarching standards to address Coastal Act requirements are in place. The City will be providing additional analysis of Coastal Act consistency in any staff recommendations to City decision-makers and in future LCP amendment submittals to the Coastal Commission.
6. Hazard Policy No. 60 (Mitigating Impacts of New Shoreline Structures) was revised in response to your comment.

7. Specific detail regarding mitigation would be developed pursuant to Hazard Policy No. 7, which among other things requires that the mitigation program "include enforceable measures to achieve proportional mitigation of resource impacts identified in shoreline protection projects." Further specific direction also may be provided by the updated Implementation Plan. The City believes that the proposed policies address the concern for potential removal of shoreline protection devices. Hazard Policy No. 57 requires that "legally permitted shoreline protection structures may be repaired and maintained until the development they are protecting is removed at which time the shoreline protection shall be reevaluated for consistency with the LCP." Pursuant to Hazard Policy No. 58, shoreline structures that are no longer protecting an existing principal structure would not be consistent with the LCP and would need to be removed. Regarding new shoreline structures, Hazard Policy No. 59 states: "structures shall only be authorized until the time when the existing principal development structure or adjacent development structures that are protected by such a device: 1) is no longer present or 2) no longer requires armoring." Unauthorized structures would need to be removed. Hazard Policy No. 61 supports these policies through monitoring requirements, including whether a shoreline structure is still needed. Hazard Policy No. 47 requires that development avoid public trust lands, which may also trigger the removal of a shoreline structure over time.
8. The height maximum of the respective zoning district would apply to the development. The Pacifica Municipal Code provides a variance process for relief from this standard if the necessary findings can be made by the Planning Commission.
9. The siting and design policies for new development in the coastal zone are detailed in Hazard Policies Nos. 44 through 54. Hazard Policy No. 50 addresses redevelopment of expansion and redevelopment of an existing structure. Redevelopment may be approved if the work conducted does not increase the legal nonconformity status of the development and if site specific technical reports conclude that development is not a safety hazard.
10. The City shall use its existing zoning and legal authorities to abate a nuisance, as it has in previous instances.
11. The City added a definition of existing principal structures to Hazard Policy No. 58 tied to the enactment of the Coastal Act.
12. The mapping of the coastal hazard zones shall guide implementation of the LCP's hazard policies (Hazard Policy No. 3). Additionally, site specific mapping and assessments may be required as part of the individual development review process. Redevelopment may be approved if the work conducted does not increase the legal nonconformity status of the development and if site specific technical reports conclude that development is not a safety hazard.
13. Hazard Policy No. 44 requires that technical reports evaluate a med-high projection of sea level rise. The City added a definition of "best available science."
14. The City amended the definition of "hazard zone" in response to your comment.
15. Hazard Policy No. 5 provides an outline of the monitoring program. The thresholds for the monitoring program will be defined in a separate effort. The intention of the policies is to trigger reevaluation and updating of the adaptation strategy in the event that certain monitoring standards are triggered (e.g., maintenance of average beach width of 100 feet). Please see response to Comment TWG02-3.

16. Hazard Policy No. 7 provides an outline of the Shoreline Mitigation Program. The details and methodology to develop the content of the Shoreline Mitigation Program will be conducted in a separate effort.
17. The City will research and evaluate feasible grant funding for adaptation strategies as expressed in the LCP's general and sub-area coastal hazard adaptation policies.
18. The Transfer of Residential Development Rights are detailed in Pacifica Municipal Code Section 9-4.4200 *et. al.*
19. The consideration of Hazard Policy No. 11 will be fact specific for each scenario. Additionally, while Hazard Policies Nos. 10 and 11 appear to be similar, the City believes there are differences between these policies which support keeping the policies separate.
20. Hazard Policy No. 50 requires that "new construction" triggered by an expansion or redevelopment of an existing development structure that is legally nonconforming "be made to conform with the LCP and, if applicable, the Coastal Act."
21. In general, buffers will be determined based on projected sea level rise and migration wetlands/habitats. Any required resource buffer would need to provide sufficient space for this projected migration, for the life of the development. Further detail may be provided in the updated LCP.
22. The intention of the policies is to assure adequate response to coastal hazards, including for development that may be in an identified hazard zone but not on the immediate shoreline. As a practical matter, many policies would not apply or trigger specific requirements for properties inland of immediate shoreline hazard. However, the City will delete the definition of shoreline as it is unnecessary.
23. Your comment is in the record.

Public Comments

P01. Amy Caplan

1. The sentence referenced in the comment was removed from the policy.

P02. Amy Caplan

1. As discussed on Page 33 of the Final Draft Adaptation Plan with Response to Comments (Table 4), there are various funding sources and methods to fund the implementation of the policies. However, it is not know at this time which one(s) will be used.

P03. Amy Caplan

1. Your comment is in the record.

P04. Dan Peknik

1. Hazard Policy No. 6 requires the reassessment of the City's Adaptation Plan every 5 years or sooner as required by a Monitoring Program, which will be prepared subsequently to the

approval of the LCP. Climate science and technology related to sea level rise and adaptation is evolving rapidly. The reassessment process will provide the City with an opportunity to review the success/failures of existing adaptation measures, update the understanding of potential risks, consider new adaptation technology, and explore funding needs and sources. Hazard Policy No. 6 does not specify a 3-year reassessment timeframe.

Hazard Policy No. 7 states that that within 3 years of adopting the certified LCP, the City must adopt a Shoreline Mitigation Program to address the coastal resource impacts of existing and future shoreline protection projects in the City.

2. Hazard Policy No. 46 is in line with a standard condition of approval that the City includes in all development permits, which states that the developer will indemnify the City for any liability arising from the development of the project.
3. The adaptation strategies analyzed in the adaptation plan do not apply to the hazard zone. Section 1.1 of the Final Draft Adaptation Plan with Response to Comments includes a clarifying statement to this point. As discussed in the response to comments on the Final Draft Adaptation Plan, the Coastal Zone was established in the Coastal Act and represents the jurisdictional boundary of the Coastal Commission. All properties west of Highway 1 generally compose the Coastal Zone in Pacifica. The Coastal Zone is broken up into seven subareas in the existing Draft LCP, which covers various topics beyond adapting to sea level rise. When staff and ESA started the sea level rise planning effort, the established subareas were reviewed and most were considered appropriate for this study. The one exception was the West Sharp neighborhood. Staff believed that it was more appropriate to combine the portion of the West Sharp neighborhood along the public sea wall and retaining wall with the Sharp Park Golf Course, West Fairway and Mori Point subarea. This decision was made because this entire stretch of shoreline is publicly owned and fully government owned shoreline may have different policy or funding considerations. Subareas were not created based on the potential of the area to be vulnerable to sea level rise.

   The Final Vulnerability Assessment can be found in Appendix A of the Final Draft Adaptation Plan. As shown in multiple locations in the Final Vulnerability Assessment (most notably on Page 53 of the Final Vulnerability Assessment), with the exception of the most western properties on Seaside Drive, most of the West Fairway Park area is not projected to be vulnerable to sea level rise through year 2100.
4. References to the Adaptation Plan in the Policies are included in Hazard Policies Nos. 4, 5, 6 and 15. Hazard Policy No. 5 references the Adaptation Plan to state that thresholds need to be establish to reassess the City's Adaptation Plan. Hazard Policies Nos. 4 and 6 reference the "Adaptation Plan as expressed in the LCP general and sub-area coastal hazard adaptation policies". The general and subarea coastal hazard adaptation policies do not include managed retreat adaptation strategies, therefore even though managed retreat is analyzed in the Adaptation Plan it is not expressed in the LCP general and sub-area coastal hazard adaptation policies and would not be consistent with the current policies.

   Hazard Policy No. 15 discusses leveraging FEMA funding opportunities to implement the Adaptation Plan. The term "as expressed in the LCP general and sub-area coastal hazard

adaptation policies" was added to provide consistency of what adaptation strategies would be appropriate.

5. Your comment is in the record.
6. The policies of the LCP only go into effect after the Coastal Commission certifies the document and the Council adopts the certified LCP. The Council will adopt the certified LCP by ordinance which will have a first and second reading and the ordinance will go into effect 30 days after approval of the second reading.

P05. Leon Slick

1. As discussed during the preparation of the Vulnerability Assessment, The City of Pacifica has not created any hazard data and does not have the budget or resources to create hazard data, therefore the City must rely on existing publicly available data. Section 2 of the Draft Vulnerability Assessment discusses the planning horizons and sea level rise scenarios selected for this sea level rise planning effort. The selected data sources and models are consistent with the State of California 2018 Sea Level Rise Guidance for best available science for sea level rise in California. Questions regarding assumptions or methodology for the sources should be directed to the agencies that created the models.

P06. Jeff Guillet

1. The City replaced your comment letter sent on September 30, 2018 at 10:35AM with this letter sent at 12:32 PM the same day to include the appropriate language in Item 10.
2. The public will have an opportunity to comment on the Final Draft LCP policies at the Planning Commission and City Council public hearings schedule for November 19 and December 10, respectively.
3. A peer review of information prepared by ESA and their consultants is outside of the scope and budget approved for this effort by City Council. Additionally, ESA and their subconsultants were recommended by staff to be hired based on their technical and professional expertise.
4. Please see response to Comment P06-3.
5. Please see response to Comment P04-4.
6. As further discussed in the April 20, 2018 Introduction to Adaptation Strategies Memo, elevating structures through siting and design standards is not considered a retreat adaptation measure, but an accommodation measures (see Figure 9, sourced from the Coastal Commission). This policy is only applicable to developments in the Sharp Park, West Fairway Park, and Mori Point subarea that are projected to be effected from flooding cause by wave run-up.
7. Please see response to Comment P04-2.
8. As supported by Draft LCP Hazard Policies 24 through 29, the City intends to armor and protect the Sharp Park, West Fairway Park and Mori Point Neighborhood.
9. In response to concerns over the beach recreation valuation of $40 per day, a value of $10 per day was analyzed and presented in the final Adaptation Plan, see Table 27.
10. As discussed during the preparation of the Vulnerability Assessment, The City of Pacifica has not created any hazard data and does not have the budget or resources to create hazard data,

therefore the City must rely on existing publicly available data. Section 2 of the Draft Vulnerability Assessment discusses the planning horizons and sea level rise scenarios selected for this sea level rise planning effort. The selected data sources and models are consistent with the State of California 2018 Sea Level Rise Guidance for best available science for sea level rise in California. The Draft LCP Policies relating to adaptation are being presented to the Council on December 10, 2018 to get their direction. The Draft LCP, which will be returned to the Council sometime in 2019 for approval prior to sending to the Coastal Commission for certification. The City will need time to reintroduce LCP to the community in 2019 and the City is required to submit an LCP package to the Coastal Commission for certification no later than the end of 2019 in as allowed in the overall grant round 3 terms.

11. A definition of "New Development" is provided in the Definitions section of the document.
12. The City will delete the definition of shoreline as it is unnecessary.
13. The Pacifica backshore consists of bluffs everywhere except along Beach Boulevard and Sharp Park Golf Course, Rockaway cove (low armored terrace), and Pacifica State Beach (dunes and development.
14. The Vulnerability Assessment and related maps are available online at www.cityofpacifica.org/sealevelrise.
15. Please see response to Comment P04-3.
16. Please see response to Comment P04-7.
17. The details and the responsibility of the monitoring program have not been established.
18. Climate science and technology related to sea level rise and adaptation is evolving rapidly. The reassessment process will provide the City with an opportunity to review the success/failures of existing adaptation measures, update the understanding of potential risks, consider new adaptation technology, and explore funding needs and sources.
19. None of the City Council members participated in the development of the Draft LCP policies.

P07 Amy Guillet

1. Your comment is in the record.
2. Your comment is in the record.

P08. Kau Talsky

1. Please see response to Comment P06-10.
2. Your comment is in the record.

P09. Jeff Guillet

1. Your comment is in the record. The Coastal Commission's comments on the public Draft LCP Policies were received on October 19, 2018 and are included in this document.

P10. Jack Kerns

1. Your comment is in the record. Your comments were received during the public comment period for the Draft LCP Policies. The comment period for the Final Draft Adaptation Plan is closed. Please find the Final Draft Adaptation Plan with Response to Comments at www.cityofpacifica.org/sealevelrise.

P11. Gil Anda

1. Your comment is in the record.
2. Your comment is in the record. Hazard Policies Nos. 5 and 6 are in line with your comment.

P12. Margaret Goodale

1. Your comment is in the record.
2. These policies are meant to guide the City's actions regarding sea level rise adaptation, but are not meant to define the specifics. Specifics for the future monitoring program, mitigation program and coordination with the Local Hazard Mitigation Plan will be developed under separate efforts.
3. These policies are meant to guide the City's actions regarding sea level rise adaptation, but are not meant to define the specifics. Specifics for determining what is feasible and the future monitoring program will be developed under separate efforts.
4. Please see response to Comment P12-4.
5. The comment is not clear on what terms need to be defined. Please see terms defined in the definition section of the document. In this context "necessary" or "required" means that a shoreline protection device is the only feasible alternative available to address the hazard.
6. Your comment is in the record.

P13. Caroline Chiramberro

1. Please see response to Comment P04-3.

P14. Chaya Gordon

1. Your comment is in the record.

P15 F. Ribera

1. Your comment is in the record. To clarify, Palmetto is the only road that connects the Fairmont West district to the rest of Pacifica without having to go through Daly City. You are correct that alternative routes are available, but they require leaving Pacifica.

P16. Stan Zeavin

1. Your comment is in the record.
2. The statement is intended to describe the need to secure funding to implement the adaptation strategies consistent with the LCP policies.

3. The funding allocated to capital improvement projects would be detailed in the annual update to the Capital Improvement Program document, which goes to the City Council for approval. Additionally, project contracts greater than $50,000 would go to the Council for approval. The funding source would be detailed in the staff report.
4. The City does have legal procedures available for its use to pursue a negligent property owner.
5. Hazard Policies Nos. 28 and 29 discuss the need for flood protection measures to protect from coastal and fluvial storm flood zones.
6. Your comment is in the record.

O'Connor, Bonny

From: Gordon's Email <gtannura@gmail.com>
Sent: Monday, October 01, 2018 8:39 PM
To: Sea Level Rise
Cc: O'Connor, Bonny; pguzmanus@yahoo.com; James Kremer; Maureen Garcia; julie.a.lancelle@gmail.com; balesl@icloud.com; Samuel Casillas; ldcunha16@gmail.com; Cindy Abbott; Robine Runneals; Jim Steele; Connie; ron maykel; krishnaswamy.shalini@gmail.com; Eileen O'Reilly | Your Personal Realtor; tynipac@gmail.com; Wehrmeister, Tina; Keener, John; Vaterlaus, Sue; O'Neill, Mike; Digre, Sue; Martin, Deirdre; Don Horsley; kevin.mullin@asm.ca.gov; City Manager
Subject: Comments to the September 10, 2018 Draft LCP Policies document

I am offering the following as public comments to and questions pertaining to the Draft LCP Policies document dated September 10, 2018.

1 My first comment pertains to the relationship of this document and the Final Draft of the Adaptation Plan. It is unclear whether that Final Draft is considered as merely interesting research or an integral part of the Policies. It is identified as "subservient to the succeeding LCP policies". As of now, it is (to me) a wholly separate document that is not in a final form and/or is not approved as such. As a foundational element of this update, it needs to be aligned and consistent with all aspects of the Policies. In addition, I continue to have concerns for the economic analysis that are not adequately answered in responses nor in the latest Final Draft (e.g., Appendix G, cumulative tax losses, beach valuation of $40 and speculative visits).

2 Secondly, the proposed schedule requires further chance for community reviews and comments. As now identified, there is no further opportunity for review of the Policies before Planning Commission review, and that is particularly concerning given Coastal Commission comments that have not been received, reviewed, and accommodated as might be necessary.

Regarding the Draft Policies themselves, I have the following comments and questions:

3 - In general, I believe an impact statement should be developed for the each of the Policies and the Policies as a whole.

4 - What is the definition of "new development", particularly as it pertains to existing developed properties? For example, if an addition or remodel of a property results in or is considered to change XX% of a property, is that considered new development? What are the type of activities that a property owner may be allowed to perform, or conversely, be restricted from performing. Note that early in this process there was community concern for not being able to perform substantive maintenance activity of their properties.

5 - For Hazard Policy 3, please clarify responsibilities for the various mapping activities and better identify monitoring period - "as necessary" is not specific enough. Per earlier comments I have made, active City monitoring and assistance is needed.

6 - For Hazard Policy 19, I see no reason to limit authorization for 20 years or 2040. Why can't the full effect and intent of the Policies govern the policy for shoreline structures?

7 - For Hazard Policy 24, I would identify a more forceful and active partnership with the City of San Francisco than suggested by ”encourage”.

8 - For Hazard Policy 26, there should be more specificity for the extent of elevation that may be required.

9 - For Hazard Policy 47, please elaborate MHTL activity vs ongoing monitoring that is proposed, and please define what is a “new tidal datum epoch”.

10 - For Hazard Policy 49, how (i.e., criteria) is development classified as minor or ancillary development? Similarly, what is the criteria for major development?

11 For Hazard Policy 52, what is the extent of buffer areas and how are they determined for each new development?

Thank you for the opportunity to comment.

Respectfully submitted,

Gordon S. Tannura
Community Work Group Member

Jim Kremer (CWG). Comments on Final Draft Policies 9-10-18 10/2/2018

MAJOR OVERALL POINTS:

1

1. I like the general Hazard Policies (HPs 1-15). I also strongly favor the trigger-based approach. I see it has been implemented in the sub-area policies.

2

2. The issue of COST seems absent, especially in the detailed HPs for the Sub-areas. It is unrealistic to propose beach nourishment and retention structures, or any active response, if funds are not available. While this has to remain unknown, the plan must address it. Repeatedly, I balked at stated HPs not only because they are not cost effective or not likely to be effective, but because sufficient funds will very likely not be available to implement them, certainly not for the many sub-areas of Pacifica where they are proposed.

You need something like "Lack of available funds" as a trigger, or some clear statement somewhere that any option may not be viable without funds. It begs the question to propose options with nothing about how decisions will be made when the stated HPs are impossible. Somehow this really should be addressed in these policies. All policies that encourage sand retention should be preceded with a statement like, "Subject to the availability of funds, …". The present tone, which implies these actions are strongly advised, should be more realistic and flexible.

3

3. I recommend that the policies should be **prioritized**. The trigger points (0 feet SLR, etc.) seem to do this but, in fact, really do not. As is, any clue to priority is absent. E.g. HP 24:no trigger; HP 25:0 ft; HP 26:0-2 ft; HP 27:0-1 ft; HP 28;0 ft; HP 29:3ft. I suspect the parenthetic classes are supposed to imply some ranking? If so, this is not clear, and any such priority scheme must be explicitly explained perhaps in some overview paragraph.

I think 2 options should be given highest priority, both should be SLR=0, and you should indicate priority when there are more than one alternative for SLR=0.)

Prioritize incentivizing risk reduction for owners. I very much like the statement (p. 6) that "The City should incentivize risk reduction" for property owners. I did not see this in any of the HPs – is that right? The City can and should play a large role in suggesting alternatives and encouraging them by guidance and policy (e.g. code changes, grants, tax incentives).

Prioritize relocating at-risk infrastructure. The option of sand addition and retention is expensive and may not work well. The alternative process of planning and getting funds to move municipal infrastructure is likely to be more efficacious and cost effective, and takes the most lead-time. It should be highest priority at SLR=0. Other approaches should be lower priority alternatives.

4. We need to recognize and explicitly address the inherent professional bias that informs these policies. At first I worried about "conflict of interest" in a civil engineering consulting firm advising the city to make heavy use of sand replenishment and retention structures in hazard responses. It is not that I distrust the motives of ESA, though they will almost certainly bid and be competitive for city contracts AS A RESULT OF THESE POLICIES. Instead, I recognize it as professional bias. This is what engineers do! Never-the-less, it is an elephant in the room and deserves attention.

4

I have suggested earlier, that armoring and sand replenishment have serious drawbacks that should be given more weight. I personally believe that different advisory experts would NOT suggest these options with such high priority as these HPs. Of course, no priorities are stated in the HPs, but perhaps they should be? (See #2 above, and I return to this criticism below in Sub Area policies.)

5. A question was raised at the CWG meeting of how many of these policies are essentially the same as existing policies. This is relevant. Isn't there a way to indicate with footnote or marginal line delineating sections or policies that are ALREADY EXIST, or when a new policy ALTERS an existing one? This would be useful not mostly for the public, but for staff and City Council & even the CCC when evaluating the revised LCP. (This question was raised for me especially in the Standard Policies sections which follow the Sub-area plans.)

5

Minor/terminology. (multiple times) "LUP" is undefined. Probably means LCP? Oh, it seems to revert to LCP in Haz Plcy 14 & 15. Search & Replace, or clarify?

6

General Hazard Policy section (p 3-5):

Haz Plcy 4 (p. 4) Development may be approved… Isn't this subject to CCC review and approval. I think this is true but left unstated. Would be good to reinforce this additional substantial constraint.

7

HP 5. Since <u>triggers</u> essentially the same as <u>thresholds</u>, this seemed confusing. Would be clearer if you add to the 2nd goal for monitoring progm: "… The monitoring program shall ALSO establish thresholds for reassessing…

8

HP 6. (Plan Update) Every 5 years is a good idea, but hopefully may not always be needed. I am worried about the <u>cost</u> of a complete reassessment of all bullets with no flexibility. Could you change wording to moderate this somehow? Don't want to weaken this Policy, but is there a caveat that is still effective? I am conflicted about this suggestion!

9

10 HP 7. I like it! At last, explicit due concern for public trust assets, which often seem to get incomplete attention. Good.

Sub-Area Plcy intro: "specific triggers are clarified in the policies" – Unclear. I didn't see that above? They may appear in the sub-area sections that follow. Specific triggers are not in Plcys but in Adap. Plan?

11 The 2 sentences on Managed Retreat are good. With the guidance for forward-looking preventive actions in the previous paragraph, this is stated in a way that should not be scary to private owners.

Sub Area Policies. I could quibble with lots of these specifics, but I see why these options seem desirable. I do NOT feel that the beach nourishment "policy" will be cost effective, and I am even less sanguine about hard "sand retention structures." I know the engineering "can do" view, but there are so many historical examples nationwide of how both these actions have been only partially helpful in the short term, and very expensive. They sound nice but are fraught with problems.

12 With this in mind I ask again: Where in these policies do you consider what the city will do if FUNDS ARE NOT AVAILABLE to attempt a proposed policy? Even if the plan is to consider this "when the time comes" something should be said about it. To blithely recommend these policies without such a caveat is misleading to the public and naive.

I decline to comment in detail on these area policies. Most of my concerns are dealt with above, and certainly do not bear repeating area by area.

13 • For Sharp Pk, HP 28 & 29 are constructive and effective, much better than 27 (nourishment & retention structures). Consider re-ordering these policies toward an implied priority (here & elsewhere).

14 • HP 31 typo? "… when backshore is 100 ft of Hwy 1. " – correct the syntax.

Standard Policies – new development. HP 44-54. Overall these seem important and appropriate. Somewhere here would be a place that my early comment could be added (*Prioritize incentivizing risk reduction*, p. 1)

15

Standard Policies – structures. This section could include another of my early comments, *Prioritize relocating at-risk infrastructure. (*HP 57, 58 & 60 and/or perhaps HP 50 earlier)

16 **Standard Policies – flooding**. These also seem important and appropriate.

Comment Form

City of Pacifica Sea Level Rise
Public Meeting
Saturday, September 15, 2018

Name: Sam Casillas

Organization: SLR community working Group

Email Address: samuelcasillas@hotmail.com

- What comments or questions do you have about the drafted policies?

-The policies do not include the use of large lots of un developed land for mitigation at SLR & Storm surge, therefore the Calson Field & The Ladawny Quarry need to be set aside for flood mitigation. I have approached the Coastal Comission and they agree with these policies that are outlined in the Natural Resources Agency Climate Adaptation Plan, 2014.

- Do you foresee any issues with the drafted policies? Please explain.

-Yes! if we develop The Quarry & Calson Field the city will endanger adjacent developed neighborhoods.

1

[over]

O'Connor, Bonny

From: ron maykel <themaykelfamily@sbcglobal.net>
Sent: Monday, October 08, 2018 7:07 PM
To: Sea Level Rise; O'Connor, Bonny
Subject: Coastal Zone Protection Management Considerations

I would recommend exploring the formation of a Shoreline Protection Management District that would encompass the zone closest to the shore, with a focus on the bluff' top properties north of Paloma West to just beyond the Dollar Radio Station.

The bluff top edge and face is impacted by rain and wind from storms, property drainage and possibly subterranean activity from rodents. 1

All properties should be individually analyzed for erosion due to structure drainage and other findings that may erode the bluff's face. Providing mitigation guidance to all property owners in this zone may be helpful.

Ron Maykel

COUNTY OF SAN MATEO
COUNTY MANAGER'S OFFICE
OFFICE OF SUSTAINABILITY

Jim Eggemeyer
Director

County Government Center
455 County Center, 4th Floor
Redwood City, CA 94063
www.smcsustainability.org

October 10, 2018

Ms. Bonny O'Connor, AICP
Associate Planner
Planning Department
City of Pacifica
1800 Francisco Blvd.
Pacifica, CA 94044

Re: Comment Letter for the Sea-Level Rise Policy Options for Pacifica LCP Update

Dear Ms. O'Connor,

We appreciate the opportunity to comment on the August 24, 2018 draft of the Sea-Level Rise Policy Options for Pacifica LCP Update (Policy Options) on behalf of the County of San Mateo Office of Sustainability. The County's Office of Sustainability strives to improve the sustainability of the County's operations and the greater community through work in areas of renewable energy and energy efficiency; resource conservation; alternative transportation; and greenhouse gas emission reductions and climate adaptation.

1 The Policy Options Report takes great strides to enhance preparedness for sea level rise for the residents of Pacifica. We are particularly impressed by the establishment of response triggers for future planning, development of habitat buffers, and the adaptive management approach recommended. We think the recommended policies could be improved by addressing the inconsistencies noted below, describing in more detail alternate adaptation options or pathways, addressing groundwater seeps and upstream solutions more clearly, defining replacement criteria for shoreline structures and clarifying or enhancing the outreach aligned to the policies.

General Comments

1. Residential Outreach Program

2 • Given the mention of triggers and need for continuous evaluation, we suggest consideration of a residential outreach program to identify potential mitigation and

OFFICE OF SUSTAINABILITY
COUNTY OF SAN MATEO

2 (Cont.)

setback opportunities. The outreach program could be aligned with efforts that would also address National Flood Insurance Program (NFIP) Community Rating System requirements. This could include education on the risks from erosion and flooding, potential mitigation strategies, and potential sources of funding. This is in line with Policy 23, which is intended to assist property owners in addressing flood protection.

2. Triggers for Sea Level Rise Adaptation Actions

3

- Triggers (e.g. Policy 17, 36 etc.): We suggest including a process for taking alternative actions if the proposed actions are not feasible. One approach is through the use of adaptation pathways, which plan for flexibility in the design and implementation of adaptation actions. This allows for improved cost effectiveness and to take into account new technologies and adaptation strategies as various points in the pathway are approached. We also suggest the City consider that substantial sea level rise impacts could occur before the trigger is reached. We suggest ensuring sufficient time is allocated to the planning, outreach, design and construction phases so that the adaptation action is implemented prior to reaching the trigger point. (See BCDC permits for Treasure Island and Oyster Point for additional information)[1].

3. Sea Level Rise projections should be consistent across Policies

4

- A number of policies reference various sea level rise projections, but are not consistent in defining these projections. Hazard Policy 44 Recommends using "high projection of sea level rise" for new development, but does not cite the source of the projection. Habitat Policy 52 does not mention what projection will be used to develop habitat buffers. Hazard Policy 45 states that vacant shoreline property should be sited and designed to be protected for 100 years, but the sea level rise projection is not mentioned. We recommend defining the projections based on Table 1 of the Final Adaptation Plan, or the best available science at the time.

Specific Policy Comments

5

- Hazard Policy 2: Consider adding landslides and tsunami runup to the list of hazards.

6

- Hazard Policy 4: The Policy states that the Adaptation Plan should be updated "time to time", but the final Adaptation Plan and Hazard Policy 6 states every 5 years or sooner. Consider changing "time to time" to every 5 years or sooner to provide consistency.

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[1] Treasure Island permit (2016.005.00), the TI risk assessment, and the Oyster Point redevelopment project permit (2017.007.00)

7

- Hazard Policy 5: Consider including groundwater seeps/piping and mass wasting/landslides in the monitoring components. This was identified as a substantial issue in the City's Adaptation Plan and mentioned in the area specific policies. This is currently considered an optional item in Hazard Policy 67. By including in Policy 5, it will ensure this issue is considered in the development and modification of future triggers.

8

- Hazard Policy 6: We are interested in how the efficacy of adaptation plan measures are evaluated and if the City Pacifica is developing metrics for this. If so, you might consider the following resource. The State of California developed a series of proposed metrics for evaluating climate preparedness across climate impacts.[2] Examples for Sea Level Rise risks include the number of critical infrastructure interruptions, number of residents living in vulnerable areas, amount of disaster funds distributed to address infrastructure, miles of transportation infrastructure impacted by erosion, flooding or landslides, changes in habitats/species, new units approved in hazard areas, acres of nature-based solution restored to protect against sea level rise risks, number of people receiving training or information on climate risks. This is not a comprehensive list, but initial suggestions from our end to include for evaluating progress towards risk reduction.

9

- Hazard Policy 9: Under the Transfer of Development Rights program, the City of Pacifica could consider including sea level rise risks as an evaluation criterion for the selection of receiver sites.

10

- Hazard Policy 10: This policy encourages the protection of "Critical Transportation Infrastructure." Since this is the only section referencing critical infrastructure, we recommend removing the word "Transportation" so that all critical infrastructure is included, which can include but is not limited to health centers, police and fire stations, evacuation centers, community centers, affordable housing and housing for seniors and people with disabilities, etc.

11

- Hazard Policy 12: We are pleased to see this policy encouraging the development of an outreach program aimed at increasing business resilience to sea level rise risks. We encourage involving these businesses in the County's Green Business Program[3] to support both resilience and greenhouse gas reductions. We also recommend reviewing Sunnyvale's pilot program (BERT) when developing an Emergency Response Training program for businesses.[4]

12

- Hazard Policy 13: This policy encouraging the development of a High-Water Mark program could benefit from partnerships with schools and community organizations.

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[2] http://resources.ca.gov/wp-content/uploads/2017/05/DRAFT-Safeguarding-California-Plan-Appendix-B.pdf
[3] http://www.smcsustainability.org/climate-change/green-business/
[4] https://www.mercurynews.com/2018/08/24/sunnyvale-businesses-will-soon-get-specialized-emergency-preparedness-training/

12 (Cont.) We recommend involving students (through the County's Youth Exploring Sea level Rise Science Program) and community organizations, such as the Sanchez Art Center in the development of a high-water mark program.

- 13 Hazard Policy 16: This policy mentions compliance with LCP setback policies for new blufftop development at Fairmont West. Where relevant and where blufftop erosion is an issue, we recommend including this requirement for new development in all sub-areas.

- 14 Hazard Policy 17: This policy mentions repeating the beach nourishment as necessary. We recommend including the types of adverse impacts that would be mitigated through beach nourishment, but also including a trigger for considering alternative actions when beach nourishment is deemed ineffective.

- 15 Hazard Policy 23: Fairmont West experiences erosion due to groundwater seeps as noted in the Adaptation Plan. We recommend considering the potential role of upstream watershed restoration and stormwater management through strategies such as green infrastructure to help with flood risk reduction.

- 16 Hazard Policy 28: Sharp Park also experiences substantial impacts from upstream flooding. We recommend considering the potential role of upstream watershed restoration and stormwater management through strategies such as green infrastructure to help with flood risk reduction.

- 17 Hazard Policy 39: This policy states the use of climate change impacts on precipitation regime to inform floodwall designs. The County of San Mateo and the City and County Association of Governments (C/CAG), through an SB1 Caltrans grant will be working with consultants to develop Countywide models showing changes in precipitation and planning level changes in riverine flows with climate change. This information will be available for use by any City in the County. We encourage the use of current and future precipitation modelling under various climate change scenarios developed through efforts such as SMC and C/CAG to inform floodwall designs.

- 18 Hazard Policy 43: As stated, this policy currently "allows" property owners to raise their homes to reduce wave runup risks. We recommend changing "allow" to "highly encourage" or provide specificity as to when this might be a requirement. We recommend including a minimum level above Base Flood Elevation, based on the risks at the site.

- 19 Hazard Policy 45: Siting and design policy to consider sea level rise and other climate change impacts states that a removal and restoration plan or bonding may be required to avoid shoreline protection or property failure. We recommend developing a trigger or stating that a trigger will be developed for when a removal

and restoration plan would be required. This could be consistent with a threshold for repetitive loss or amount of property impacted by sea level rise risks.

20 • Hazard Policy 47: For new Mean High Tide Level (MHTL) surveys consider defining what constitutes a significant relative rise in annual local mean sea-level records since this will be used as a trigger to update MHTL surveys.

21 • Habitat Policy 52: We are pleased to see a policy targeting the development of habitat buffers for sea level rise. It's consistent with a recent San Mateo County resolution supporting the Nature Conservancy's Coastal Hope Project to help sensitive habitats and species migrate inland in the face of sea level rise. We recommend clarifying the types of habitats that would be protected/included beyond wetlands. We recommend including buffers around groundwater dependent wetlands and streams as well.

22 • Hazard Policy 53: When considering adequate drainage and erosion control, we recommend consideration of groundwater seeps, piping and pathways in the assessment of stormwater and dry weather flow impacts.

23 • Hazard Policy 54: We are pleased to see inclusion of activities that reduce greenhouse gas emissions in the policy. Consideration could also be given to support microgrids and backup battery systems to address resilience in the case of coastal hazards.

24 • Hazard Policy 57: States that an expansion, augmentation, or replacement of 50 percent or more of shoreline structure constitutes new shoreline structures. We recommend this Policy be aligned to be consistent with state and local codes and/or definitions (e.g. planning and/or building).

25 • Hazard Policy 67: Note that the USGS' CoSMoS model to be released as an update in November will include projected changes in groundwater table elevation with sea level rise, and we recommend using this model as a planning level data source for this policy to assess groundwater risks to erosion.

Thank you again for the opportunity to comment on the Sea-Level Rise Policy Options for Pacifica LCP Update. Please contact Marcus Griswold, Resource Conversation Climate Specialist at mgriswold@smcgov.org or 650-363-1902 for questions or additional information.

Sincerely,

Jim Eggemeyer
Director, Office of Sustainability

Attachments

cc: Hilary Papendick, Program Manager, Climate and Adaptation
Jasneet Sharma, Lead Resource Conservation Specialist
Marcus Griswold, Climate Resiliency Specialist

STATE OF CALIFORNIA—NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

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October 19, 2018

Tina Wehrmeister
Planning Director
City of Pacifica
1800 Francisco Blvd.
Pacifica, CA 94044

Subject: City of Pacifica Draft Land Use Plan (LUP) Hazard Policies

Dear Ms. Wehrmeister:

1

This letter is in response to the City of Pacifica's request for comments on the "Proposed Updated Land Use Plan Coastal Hazards Policies" provided to us in a memo from ESA to the City (entitled "Sea-Level Rise Policy Options for Pacifica LCP Update" and dated August 24, 2018). As you know, we previously provided comments on a memo from ESA to the City with the same title and date (see attachment 1 for that memo, and see attachment 2 for our comments on it in a letter to the City dated August 31, 2018). We were surprised to see that the second memo (see attachment 3) was substantially different than the first memo and did not respond to the majority of our suggestions. Regardless of why the City may have chosen this approach, with respect to the second memo, many of our previous comments still stand, and are repeated below as appropriate. We have also suggested specific modifications to the policies and text within the new memo, including indicating where we believe that language from the first memo we reviewed should be re-inserted (see attachment 3). It is our understanding that the City Council will be considering these draft hazard policies by themselves now, but it is ultimately the City's intention to incorporate them into an overall draft LCP update for consideration sometime in 2019. As such, although we provide some preliminary comments and suggestions here, it appears that there will also be future junctures when further refinement and comment is possible. Toward that end, we look forward to continued dialogue on the proposed policies, and to working with City staff to further develop this policy language in conjunction with the rest of the LCP update as the draft moves forward, including as it is modified in light of public and City Council input.

When we commented on the first memo we noted that we believed that the proposed policies began to provide a solid foundation and framework for advancing the City's sea level rise adaptation efforts. As the Coastal Commission has routinely stated, clear, proactive policies for addressing sea level rise are critically important. This is undoubtedly true in Pacifica where, as is identified in the City's Sea Level Rise Vulnerability Assessment (June 2018), the City is already vulnerable to storm and wave impacts. Such impacts are evidenced by the loss of blufftop residential structures in recent years, and by the fact that efforts to protect against such impacts have resulted in narrowed or completely inundated beaches backed by armoring where beach

access can be largely unavailable at higher tides. These hazards are only expected to increase as sea levels rise, resulting in a significant loss of public recreational beach resources and shoreline-area habitats, as well as damage to and loss of residential and commercial structures, and transportation, stormwater, and wastewater infrastructure. In particular, given its beaches are a fundamental backbone and significant part of the City's social fabric and economic engine, it is critically important for the policies to reflect the importance of the City's beaches, and to be transparent (and provide appropriate mitigations) where the policies might lead to increased impacts to same.

1 (Cont.)

To this end, we are concerned that both the removal of some proposed policies from the first memo and the addition of new language in the second memo will result in policies that do not clearly state the need to ensure that new development and redevelopment be sited and designed to be safe from coastal hazards and to avoid the need for armoring. We also continue to have the same concerns that we have previously relayed to the City regarding how existing development will be addressed going forward in a manner that ensures beaches, habitat, public access, and recreation will be preserved for current and future generations, as required by the Coastal Act. In addition, we previously identified concerns associated with policy preparation based on a lack of technical and feasibility information as the City worked through its Adaptation Plan (including through meeting with you and your staff throughout this year as well as letters dated June 12, 2018 and August 29, 2018). One of our primary concerns was, and remains, ensuring that policies which prescribe specific adaptation measures (like armoring and beach nourishment with the use of sand retention structures) are based on a clear and detailed assessment of the environmental, technical, and economic feasibility of such alternatives. It is not clear that such information has been fully developed.

We do continue to recognize that addressing new and existing development in a place like Pacifica is a complex challenge given the scope of current and future hazards combined with existing patterns of development and shoreline armoring and uncertainties about future sea level rise and future conditions on the ground. As we have previously explained in meetings with and letters to City staff, there are policy approaches that would allow for continued reliance on armoring for certain development over a specified time horizon, including as identified in the City's current sub-area policies. However, such policy approaches still need to ensure that impacts to other coastal resources would be mitigated, and need to build in an understanding that other adaptation options may be necessary if and when armoring (and/or beach nourishment) can no longer provide adequate protection for both development and coastal resources. Part of the challenge before us is to refine the policies and strike an appropriate balance in order to protect the range of coastal resources and development, while ensuring that short and long term policies interact and seamlessly move towards similar objectives.

In any case, we want to commend the City for tackling difficult sea level rise issues and for starting to identify practical and substantive measures to address such issues moving forward. To be sure, the proposed policies provide many key mechanisms for future steps to take over time as sea level rise advances, including interim protection measures, beach nourishment, monitoring of changing conditions, and periodic updates to the City's Adaptation Plan to respond to such changes. Although many important coastal hazard planning provisions are addressed in the proposed policies and they provide a good foundation for the LCP update, we also believe that

1 (Cont.)

many important details will require refinement moving forward, including to ensure that the proposed policies are logical, feasible, realistic, and consistent with the Coastal Act. We continue to look forward to working together with the City to refine this work so that it achieves Coastal Act and City objectives related to minimizing hazards and protecting coastal resources, even as sea level rises.

In terms of some more specific comments on the draft policies in the second memo, here are some preliminary observations:

2

- The previous memo included a summary with details of how the City has dealt with the impacts of shoreline erosion and coastal flooding for decades. We recommend including a similar setting description in the LUP itself to speak to the broad purpose of the proposed coastal hazard policies and to provide context for their future implementation.

3

- The proposed policies rely heavily on beach nourishment as a key adaptation strategy. Although we believe that nourishment is an appropriate strategy to evaluate and pursue, we also believe that the information that could underpin such a strategy needs to be further fleshed out. As we have discussed previously with City staff, the technical analysis and supporting information regarding potential feasibility and effectiveness of beach nourishment (and also sand retention structures) needs to be better developed (including in relation to different grain sizes and the effects of sand retention structures on erosion in other areas), particularly to support it as a primary adaptation strategy through the proposed policies. In short, we think policies that rely so heavily on nourishment, particularly in the shorter term, need to be supported by more thorough data. Similarly, the use of sand retention structures can alter ocean waves, currents and sand movement, potentially exacerbating erosion on one side or the other of the structure (e.g., depending on currents, littoral drift, etc.). These potential impacts should be evaluated accordingly if sand retention structures are planned to be used in conjunction with beach nourishment.

4

- The proposed policies refer to developing a "Shoreline Mitigation Program" in the future to address impacts associated with hazard response. The policies need be structured to address such impacts *now*, and many policies seem to imply that is their intent. It may be appropriate to identify development of a future mitigation program as a refinement and a next step, but it needs to be clear that this does not negate the need for mitigation in the interim. Accordingly, given the Shoreline Mitigation Program is not yet complete, we recommend removing reference to implementation of the Program in the policies, instead of referencing only that it will be developed in the future. Until the Program is fully developed, mitigation should be implemented consistent with the type of requirements found in proposed Hazard Policy 60.

5

- It may be appropriate to reformat and reorganize the policies. For example, the "Standard Policies" sections from pages 12-16 account for the overarching approach for new development in all areas throughout the City, and in both the short- and long-term. It may make better logical, and document-flow sense to move these, along with the definitions section, to the beginning of the document. Additionally, although we understand the policy construct that suggests that general policies may be superseded by more specific policies for each sub-area, we are concerned that some of the more specific policies appear to be making prescriptions for outcomes that are not based on analysis (e.g., allowed armoring). It is not

5 (Cont.) appropriate, in our view, to have policies state conclusions that have not yet been supported by analysis, and it may be that the overarching policies are required to take precedence in that regard unless and until more definitive conclusions can be drawn.

- It appears that some critical policy language is missing from some of the proposed draft policies. Please ensure that the following are addressed:

6
  - Please provide design standards for the construction of allowable shoreline protection devices (e.g., they must: blend with natural environment; avoid significant habitat areas; minimize footprint; protect, and where feasible, provide public access; control erosion from surface and groundwater flows; etc.).

7
  - Please identify specific details regarding how proportional mitigation for all unavoidable impacts of shoreline protection devices to coastal resources (e.g., shoreline sand supply, beaches, public recreational access areas and amenities, public views, water quality, etc.) is to be measured and applied. Please ensure that the policies require removal of shoreline protection devices when they are no longer required to protect existing structures in danger from erosion (including when structures are demolished and then rebuilt, or redeveloped) when such removal and restoration can be accomplished without endangering existing principal structures or existing public facilities on adjacent sites.

8
  - Please discuss how height limitations will be accounted for if/when structures need to be elevated to meet FEMA base flood levels in some areas.

9
  - The siting and design policies for hazard areas no longer address substantial improvements to existing development (or 'redevelopment') in the second memo. We recommend the City develop specific language for how the siting and design of structures will be addressed when they are redeveloped in situations where there is existing, legally authorized shoreline protection and in cases where there is a natural bluff or shoreline fronting the proposed development. In addition, we recommend including separate policies to address new development on vacant lots that are fronted by existing, legally authorized shoreline armoring and in places where there is a natural bluff or shoreline. In cases where new development/redevelopment cannot be located safe from hazards without reliance on existing and/or new armoring or cannot meet the required setbacks, any approval for such development should include triggers for eventual removal in response to coastal hazards (e.g., when declared unsafe for occupancy and/or use; when the development encroaches onto current or future public trust land and the State Lands Commission denies a grant, lease, or other legal mechanism to allow the development to remain in place; when access and utilities are no longer available to serve the development and cannot be restored; when the blufftop edge erodes to the minimum setback line; when removal is required by subsequent adaptation planning; etc.), as well as propose ways in which the new and redeveloped structures will mitigate for that armoring's impacts to coastal resources.

10
  - Please provide a policy that outlines how the City will address development that becomes unsafe for occupancy and a public nuisance due to coastal hazards.

- Certain themes, concepts, and terms used throughout the draft policies need to be better defined or explained in order for us to better evaluate the intent and application of the proposed policies, including as follows:

11

  - Please define "existing structure," as it is used often in the policies in relation to shoreline armoring. We recommend that it be defined as a structure legally authorized prior to the effective date of the Coastal Act on January 1, 1977, including as is identified in the Commission's Sea Level Rise Policy Guidance.

12

  - Instead of only a reliance on "new development", please also define "redevelopment" to ensure that current development is brought into compliance with the policies as it is substantially changed over time. Please establish clear thresholds for when repair, maintenance, improvement, or other work is conducted to the extent that a structure needs to be reviewed against all current standards, including for coastal hazards. Typically, such thresholds would at the least include alteration (including demolition, renovation or replacement) of 50% or more of major structural components.

13

  - Please further describe what constitutes current "best available science" and whether there is a different standard for what amount of sea level rise should be evaluated in geotechnical studies versus what amount of sea level rise new development must be sited/designed to be safe from. For example, consider specifying that all new development must evaluate, at a minimum, the medium-high projection scenario (from the 2018 OPC Sea-Level Rise Guidance and in line with the Draft 2018 Science Update to the Commission's Sea Level Rise Policy Guidance) over its anticipated lifetime, but that if new development cannot be sited to avoid impacts over that time period certain minimum standards must be met (similar to the policies related to takings). We would be happy to work with the City on this topic.

14

  - Please explain how the hazard areas referenced in the policies will be defined, including the coastal hazard zones, coastal hazard maps, flood hazard zones, and tsunami run-up zones. The current definition of hazard zone refers to the City's current maps, but it is not clear to what maps that refers. Any maps referred to in the policies should be included as part of the LCP. In addition, for particular hazard areas that will be mapped, we recommend that the City add timeframes for how often these maps must be updated and include contingencies in the event that they are not updated by the prescribed deadline.

15

  - Proposed Hazard Policy 5 states that the City will implement a monitoring program for sea level rise to establish thresholds for reassessing the City's Adaptation Plan. Please describe the type of thresholds that will be identified. Additionally, the current sub-area policies refer to triggers, but do not explain how the triggers would be implemented. For example, clarify whether armoring/nourishment etc. would be implemented when the bluff offset reaches the specified distance, or whether the specified distance triggers a new approach. Please also explain how beach width and bluff offsets will be measured.

16

  - Proposed Hazard Policy 7 states that the Shoreline Mitigation Program will identify priority improvements for maintaining and enhancing coastal shoreline resources, particularly public access and recreation. Please further describe what types of

16 (Cont.) improvements the City is contemplating in this regard and provide relevant examples.

- 17 Proposed Hazard Policy 8 refers to funding for "adaptation strategies". Please outline what kind of strategies this refers to, and specify if this will include voluntary removal or relocation of development.

- 18 Proposed Hazard Policy 9 calls for identifying areas where densities and heights may be increased using TDR credits, including to facilitate affordable housing. Please describe how such determinations will be made, including which specific criteria will be evaluated.

- 19 Proposed Hazard Policy 11 states that the City will preserve, protect, or relocate hazard prone infrastructure to maintain critical services and the environment. Given that these two goals will often conflict, please specify what criteria will be evaluated in determining the preferred option for infrastructure projects. Also, given similarities and overlap, please consider combining with proposed Hazard Policy 10.

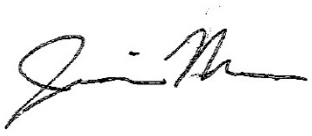
- 20 Please clarify the intent of proposed Hazard Policy 50. Presumably redevelopment of existing development will require the entire structure to conform to applicable LCP standards, but the policy is not clear on this point.

- 21 Proposed Hazard Policy 52 requires sea level rise buffer areas be added to new development if necessary to allow for the migration of wetlands and other shoreline habitats. Please describe how such buffer areas will be delineated, applied, and protected as same.

- 22 The definition of shoreline within the hazard policies appears to exclude shoreline properties adjacent to rivers, streams and creeks, as well as properties that will be impacted by erosion and/or flooding by large storm events or over longer time periods due to rising sea levels. We recommend that the policies instead refer to coastal hazard areas so that properties that are potentially subject to coastal flood and erosion hazards both now and in the future will be reviewed for consistency with the hazard policies.

23 Again, we appreciate and commend the City on developing these draft coastal hazard policies and the related policy framework, and look forward to helping to refine the policies and approach through our ongoing collaboration on the City's LCP update. It is clear from these policies that the City is taking the issues and problems associated with coastal hazards seriously, and in a way that advances the City's approach to sea level rise and LCP planning. We hope these comments help move us forward in that regard. If you have any questions or would like to discuss these matters further, please don't hesitate to contact me or Patrick Foster of my staff. Again, we greatly appreciate the ability to be a part of this important planning process and look forward to continued coordination and discussion of this important effort.

Sincerely,



Jeannine Manna
North Central Coast District Manager
California Coastal Commission

cc: Bonny O'Connor, City of Pacifica Planner

Attachments:
Attachment 1 – ESA memo to the City dated August 24, 2018 (memo 1)
Attachment 2 – CCC comments on memo 1 dated August 31, 2018
Attachment 3 – ESA memo to the City also dated August 24, 2018 (memo 2)

ESA

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memorandum

date August 24, 2018

to Bonny O'Connor, AICP

cc Tina Wehrmeister

from James Jackson, PE; Charles Lester, PhD, JD; Bob Battalio PE

subject Sea-Level Rise Policy Options for Pacifica LCP Update

Summary

This memo presents a recommended LCP policy update to address projected sea-level rise and its impacts on coastal development and resources within the City of Pacifica. The City has grappled with the impacts of shoreline erosion and coastal flooding for decades, especially in north Pacifica, generally north of Mori Point, but also Rockaway, Linda Mar and Pedro Point. Most of the city's shoreline development pre-dates Proposition 20 and the Coastal Act, making it eligible for shoreline protection under state law. Since the early 1970s many of the properties north of the Pacifica pier have been armored with rock revetments and seawalls. At the same time, the high, sandy bluffs of Pacifica present difficult engineering challenges. Since the late 1990s a dozen homes and three apartment buildings along Esplanade Ave could not be saved and have been removed. Several reinforced concrete seawalls and rock revetments have failed and been repaired to varying degrees. Coastal storms are also already extremely hazardous along Beach Boulevard; and homes in the Sharp Park and Linda Mar neighborhoods are subject to flooding from the sea, stream and storm runoff, and rising groundwater. Coastal access is limited north of the pier where shore erosion has met the armoring, causing ephemerally narrow to non-existent beaches. While Rockaway Beach is also mostly armored, the main beach at Linda Mar continues to be an important recreational resource. The recent damages and loss of coastal resources indicates an existing problem that will become progressively worse regardless of the amount of sea-level rise.

Sea-level rise promises to make all of Pacifica's coastal hazards even more challenging. The City's vulnerability assessment concluded that residential and commercial properties and significant public infrastructure are endangered by future sea-level rise. The recently completed Sea-level Rise Adaptation Plan analyzed various strategies for addressing sea-level rise in each of eight sub-areas of the City. The plan concludes that maintaining and expanding armoring for existing development is the best near-term strategy while the City pursues beach nourishment and sand retention options that might rebuild and better maintain Pacifica's beaches. However, the plan also concludes that over the longer run, managed retreat of existing development and infrastructure may be required. While the economic analysis indicates managed retreat may be a more cost-effective and superior

investment for the City, including the benefit of maintaining its natural shoreline resources, there is concern in the community that it is premature to adopt this strategy and many coastal property owners and associated service industries have rejected the concept out-right.

The LCP update policies proposed here would implement a phased adaptation strategy that relies on continued armoring over the next several decades in most sub-areas in conjunction with a comprehensive mitigation program for the resource impacts of armoring, particularly the anticipated loss of Pacifica's beaches. The program will direct mitigation fees mostly to the Linda Mar and Rockaway sub-areas where they would be most effective in offsetting the loss of beach resources. The LCP would also require the simultaneous pursuit of alternative softer strategies for protecting shoreline resources over the longer run, such as beach replenishment. In particular, sand placement to widen the beach in Rockaway will be pursued owing to its relatively favorable economics ranking and smaller scale. The effectiveness of the shorter-term armoring strategy in protecting development and coastal resources may be contingent on the success of these alternative strategies. Finally, the LCP update would establish programs for implementing voluntary managed retreat over the shorter run and potential acceleration of City-sponsored (and funded) managed retreat over the longer-run (2050-2100) as the impacts of sea-level rise accelerate. This includes using transfer of development rights to relocate development in hazard zones to safer areas of the City, and taking advantage of potential state and federal funding for the planned removal of endangered structures and infrastructure.

The intent of the LCP update is to continue to protect existing, private development and the City's infrastructure while recognizing and anticipating what may be an inevitable need to move back from the shoreline. And while the policies support new efforts for community-level funding of continued armoring, beach replenishment, and planned retreat, including establishing new geological hazard abatement districts or securing federal hazard mitigation funds, they also make clear that private landowners in hazard zones are responsible for and must assume the risks of continued armoring and reinvestment in their properties. This includes assuring that adequate mitigation in the form of in-lieu fees is provided to the City to support beach recreation and other coastal resources impacted by armoring; and making sure that existing or future shoreline development doesn't encroach on public tidelands. Consistent with the City's current LCP and state Coastal Commission guidance, the updated LCP would allow for significant improvements to properties in hazard zones, but substantial redevelopment would trigger conformance with the City's hazard policies and zoning rules, much like the rules for other non-conforming development in the City.

LCP Background

Pacifica's Local Coastal Program (LCP) guides development and protects coastal resources within the Coastal Zone. LCPs must be consistent with the California Coastal Act of 1976, as amended. Pacifica's LCP is made up of two parts: the Land Use Plan (a compilation of goals, policies, and recommended programs) and Implementation Plan (regulations and zoning district maps that implement the provisions of the Land Use Plan) (City of Pacifica, 1980; 1994). The Implementation Plan has been codified into Pacifica's municipal code as individual sections (Chapter 4, Articles 43 and 44) in Title 9 Planning and Zoning (City of Pacifica, 2017) [CITY TO CONFIRM, IP IS NOT AVAILABLE ON THE WEBSITE].

The California Coastal Act aims to ensure that public access to and along the shoreline is maintained; that water quality, marine life, and environmentally sensitive habitat areas are protected; and that coastal visual resources and special communities are preserved. The Coastal Act calls for certain land uses within the Coastal Zone to have priority over other uses: recreation and visitor-serving uses, fishing, boating, and other coastal-dependent uses, and public works and industrial facilities needed to support priority uses.

Pacifica's current Land Use Plan was certified in 1980. The Land Use Plan includes the following main sections:

- The California Coastal Act policies in effect at the time the Land Use Plan was adopted
- Land use designation maps organized by neighborhood, and land use designation definitions
- Neighborhood map of six coastal neighborhoods
- A detailed description of existing conditions, development criteria, and coastal access policies for each coastal neighborhood
- A detailed description of each existing or proposed beach access point
- Policies addressing a range of topics, including habitat protection, geotechnical hazards, coastal views and viewsheds, housing, etc.

Pacifica's current Implementation Plan was certified in 1994 [CITY TO CONFIRM] and establishes regulations that address permit requirements and procedures, creation of a Coastal Zone Combining District that serves as an overlay to the underlying zoning districts, protection of sensitive coastal resources or to ensure public shoreline access, protection of environmentally sensitive habitats, geotechnical suitability, grading and drainage, shoreline protection, public shoreline access, coastal view corridors, and neighborhood commercial districts.

In 2009, the City of Pacifica initiated a comprehensive update to its General Plan and LCP. A draft LCP Land Use Plan was prepared that includes background information and policies for the following themes: land use and development, public access and recreation, environmental and scenic resources, and natural hazards (City of Pacifica, 2014). The draft LCP has not been adopted by the City of Pacifica nor certified by the California Coastal Commission, and is not in effect at this time.

PROPOSED UPDATED LAND USE PLAN COASTAL HAZARDS POLICIES

General Policies

Hazard Policy 1 (Key Coastal Act Policies).

The City of Pacifica adopts the key policies of the Coastal Act to address coastal hazards:

> ***PRC 30253**. New development shall: (1) minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (2) 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; and,*
>
> ***PRC 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.*

The updated LCP and sub-area adaptation policies adopted herein are intended to achieve and are consistent with these key policies, subject to periodic updating as resource and development monitoring and program implementation may dictate.

Hazard Policy 2 (Sea-level Rise and Best Available Science).

Planning and development reviews in the City of Pacifica shall use, as applicable, the best available science about projected sea-level rise and other climate-change related environmental changes when addressing coastal erosion, bluff failure, flooding and other coastal hazards.

Hazard Policy 3 (Hazard Identification and Mapping).

The City's coastal hazard zones shall be mapped based on the best available science about projected sea-level rise, erosion, flooding, and other coastal hazards. Mapping shall be updated as necessary to guide implementation of the LCP's hazard policies. Notwithstanding the coastal hazard zone maps, site-specific hazard mapping and assessment may be required as part of the individual development review process.

Coastal Hazards and Sub-area Adaptation Policies

Hazard Policy 4 (Shoreline Adaptation Plan and Override).

The City shall implement its Sea-level Rise Adaptation Plan (Appendix xx) as expressed in the LUP's general and sub-area coastal hazard adaptation policies. The City shall monitor implementation and, from time to time, update the Sea-level Rise Adaptation Plan to strengthen public safety, preserve existing neighborhoods, assure local economic vitality, respond to climate change, promote environmental justice, implement the Coastal Act and protect the public trust.

Development in coastal hazard zones may be approved consistent with the sub-area policies (xx – xx) if the following findings can be made:

a. The proposed development is sited and designed to minimize coastal hazards and impacts to coastal resources to the extent feasible, consistent with the Adaptation Plan;

b. The approval is limited in duration, consistent with sub-area policies.

c. All project impacts are mitigated to the maximum extent feasible through the City's shoreline mitigation program (Hazard Policy xxx) or consistent with Hazard Policy xx.

d. The project does not pose unacceptable risks to life or property or otherwise create a nuisance; and

e. The project will not encroach on public trust lands.

Hazard Policy 5 (Monitoring Shoreline Change).

The City shall implement a monitoring program for sea-level rise, beach width, bluff offset, flooding and storm damage, and other potential measures or triggers for guiding implementation of the LCP's shoreline adaptation policies.

Hazard Policy 6 (Shoreline Mitigation Program).

Within three years of certification of the LUP update, the City shall incorporate into the LCP a Shoreline Mitigation Program to address the coastal resource impacts of existing and future shoreline protection projects in the City. Special emphasis shall be placed on maintaining beaches and public access to and along the shoreline. The program will update the public access inventory of the LUP as necessary, include a coastal resource inventory and identify priority improvements for maintaining and enhancing coastal shoreline resources, particularly public access and recreation. The program will include enforceable measures to achieve proportional mitigation of resource impacts identified in shoreline protection projects, including consideration of beach widths, sediment management plan actions, and monitoring. The program will identify potential funding sources for implementation of identified improvements, such as new hazard abatement districts or city fees or taxes. The program will include provisions for monitoring implementation and program updates as necessary.

Hazard Policy 7 (Adaptation Funding).

The City will seek and establish as feasible new funding mechanisms, such as the formation of Geologic Hazard Abatement Districts (GHADs), participating in County Service Areas, or securing FEMA and other federal or state adaptation and hazard mitigation funds, to finance

shoreline protection projects, beach replenishment, the Shoreline Mitigation Program and voluntary managed retreat projects. The City will encourage and assist in the acquisition of grants for multi-objective, nature-based solutions for adaptation and the voluntary purchase or relocation of property and structures in high hazard areas to mitigate against damage to vulnerable structures and infrastructure.

Hazard Policy 8 (Managed Retreat).

The City shall establish and pursue funding of a Managed Retreat Program for voluntary removal, modification or relocation of development when necessary to protect private property interests and provide for the migrating shoreline and associated coastal resources, such as sandy beach area. The Managed Retreat Program will include identification of priority areas and timing for implementing managed retreat, based on sub-area planning, monitoring, and beach management planning pursuant to the LCP; provisions for voluntary participation of property owners in the program; strategies for funding the purchase of easements or development rights from participating property owners; and provisions to allow phased implementation to maintain occupancy of properties for as long as possible, including through acquisition and lease-back arrangements.

Hazard Policy 9 (Transfer of Development Rights).

Use the City's transfer of development rights (TDR) ordinance to relocate development from coastal hazard zones (sending sites) to receiving sites outside of hazard zones. Identify areas where densities and heights may be increased using TDR credits, including to facilitate affordable housing.

Hazard Policy 10 (LHMP Alignment).

Coordinate City departments and programs to align the Local Hazard Mitigation Plan (LHMP) with the LCP to ensure proactive, coordinated and streamlined adaptation efforts and response to future coastal hazards. Leverage FEMA funding opportunities for hazard mitigation and other related funding mechanisms to implement the Shoreline Adaptation Plan.

Hazard Policy 11 (Critical Transportation Infrastructure).

The City will pursue opportunities to preserve and protect critical transportation infrastructure to mitigate against isolation, economic loss and ensure public safety.

Hazard Policy 12 (Hazard Prone Infrastructure).

The City will preserve, protect, or relocate hazard prone infrastructure to maintain critical services and maintain the environment.

Hazard Policy 13 (Business Outreach).

The City will develop and deliver business outreach programs to mitigate against the functional loss of community businesses and promote business resiliency.

Hazard Policy 14 (High Water Program).

Where feasible, the City will implement a program to record high water marks following high-water events.

Hazard Policy 15 (Flood Ordinance Consistency).

Review and amend as necessary the City's flood damage prevention ordinance to assure consistency with the updated policies and ordinances of the LCP.

Sub-Area Policies and Programs

The following policies and programs implement the near-term sea-level rise adaptation priorities for each sub-area in Pacifica, and identify mid- and longer-term measures, subject to feasibility and monitoring concerns. These priorities were developed based on existing conditions and existing/near term vulnerabilities for each sub-area, as well as the City's adopted goals for the project that include protecting existing development as well as preserving and enhancing coastal access along Pacifica. While the cost-benefit analysis conducted for the City's Sea-level Rise Adaptation Plan indicates that managed retreat/realignment may be a long-term cost-effective option in many sub-areas, the immediate costs and impacts to the City's adopted goals would be severe compared to the benefits speculated in the long-term future, which makes this option difficult to support and implement in the near-term. The adaptation priorities discussed below can buy time for the City by protecting at risk assets in the near term and leaving options open for the long term.

The recommended time frames for action are based on the medium-high risk aversion SLR projection of 6 feet by 2100. As required in other policies, the City shall monitor erosion, flooding, and sea-level rise amount into the future to identify triggers for adaptation measures. Many initial actions are required regardless of future SLR due to existing conditions. Where applicable, specific triggers are clarified in the policies.

Generally, for all lands within the 2050 Pacific Institute erosion hazard zone, utilities, roadways and other public infrastructure should be floodproofed unless other adaptation alternatives are implemented and performing well. The City should incentivize risk reduction (floodproofing etc.) that property owners can invest in, with funding or code updates. In addition, the City should consider realigning infrastructure (utilities, roadways) that may be exposed to coastal erosion and flooding to reduce the consequences of under-performance of protection measures (construction and maintenance of armoring structures).

Fairmont West

The roadway and utilities in Fairmont West are at risk after one to two feet of sea-level rise. Some beach width may exist for access and other coastal resources, but given the high bluffs here, there is not adequate vertical access to the beach. Due to the undeveloped conditions of the bluffs in this sub-area, armoring is not required immediately. Beach nourishment, while a lower priority for this sub-area compared to other more developed sub-areas in city, could take place at a later date with a larger volume of sand. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased.

Hazard Policy 16 (Shoreline Structures: 2020-2050, 0-1 foot SLR or 260-foot offset from bluff toe to infrastructure).

Shoreline structures shall be avoided except that the Dollar Radio property may maintain and expand shoreline structures to protect existing development in danger from erosion if found to be the least environmentally-damaging alternative, impacts are fully mitigated consistent with

Hazard Policy xx, and any prior permit conditions or legal obligations pursuant to the California Coastal Act are addressed. Approvals shall be limited to twenty years, and may be reauthorized if no other less environmentally damaging alternatives are feasible. After 2040, allow shoreline protection for the public road and sewer line if necessary. Any new blufftop development shall comply will all LCP setback policies.

Hazard Policy 17 (Beach Nourishment: 2050-2060, 2 feet SLR or 260-foot offset from bluff toe to infrastructure)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (see artificial headlands concept in the Adaptation Plan), to reduce shoreline structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Repeat as necessary. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 18 (Transfer of Development Credits: 2020-2100, ongoing).

Provide an option to private landowners to voluntarily transfer development potential and/or remove existing development through a public buyout as feasible.

Hazard Policy 19 (Realignment of Public Infrastructure: 2050-2070, 2-4 feet SLR or 260-foot offset from bluff toe to infrastructure).

Initiate transportation study to identify alternative access options for Fairmont West. Realign Palmetto Avenue and wastewater pipeline or implement other adaption plans that may be identified through future study if shoreline protection or beach nourishment are not feasible and effective in maintaining existing conditions.

West Edgemar and Pacific Manor

Hazard Policy 20 (Shoreline Structures: 2020-2040, 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development).

Maintain and expand shoreline structures to protect existing public infrastructure, including between Bill Drake Way and Manor Drive. Allow private property owners to maintain existing or construct new shoreline structures, consistent with prior permit conditions or legal obligations pursuant to the California Coastal Act. Limit authorization of all new structures to twenty years or 2040, whichever is sooner, and require mitigation of beach, public access and recreation and other resource impacts, consistent with Hazard Policy xx. Consider reauthorization subject to beach monitoring and implementation of beach nourishment and other strategies to maintain beaches.

Hazard Policy 21 (Beach Nourishment: 2020-2050, 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (artificial headlands concept), to reduce shoreline structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 22 (Managed Retreat: 2020-2100, 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development).

Provide option to private landowners to voluntarily remove existing armoring and receive a buyout of property as feasible. After 2040, if the beach nourishment strategy planned under Hazard Policy xx is ineffective at maintaining beaches, fund and implement a voluntary relocation, buyout or transfer of development rights of private property. Evaluate and implement relocation of public infrastructure as necessary. Assure protection of public access to and along the shoreline, consistent with the Public Access Plan required under Hazard Policy xx.

Northwest Sharp Park

The backshore of Northwest Sharp Park is armored but may be overwhelmed by waves with as little as one foot of sea-level rise, due to scour and structure sloughing, increased wave loads and overtopping of the structure. Beaches tend to exist ephemerally in pockets, with armoring impeding lateral access from the degraded vertical access ways. Existing property and infrastructure are at risk from coastal erosion so actions should be taken soon. A public access improvement plan should be provided, consistent with the City's beach mitigation program. Due the potential lead time of establishing a sand source, beach nourishment planning should begin immediately. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased. In absence of any beach nourishment, managed relocation of private property by private property owners (optional) and realignment of public infrastructure will be needed before 2050 even if coastal armoring structures are maintained in their current elevations (up to the edge of bluff).

Hazard Policy 23 (Shoreline Structures: 2020-2040, 0-1 feet SLR or 70-foot offset from bluff toe to development or infrastructure).

Private land owners may maintain and expand shoreline structures to protect existing development in danger from erosion, consistent with Hazard Policy xx and any prior permit conditions or legal obligations pursuant to the California Coastal Act. Approvals shall be limited to twenty years, and may be reauthorized if no other less environmentally damaging alternatives are feasible.

Hazard Policy 24 (Beach Nourishment: 2020-2050, 0-2 feet SLR or 70-foot offset from bluff toe to development or infrastructure)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (artificial headlands concept), to reduce shoreline structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Repeat as necessary. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 25 (Flood Protection: 2030-2040, 1 feet SLR).

Enable property owners to modify structures to manage impacts of wave run-up and overtopping of bluff face.

Hazard Policy 26 (Managed Retreat/Realignment of Public Infrastructure: 2030-2050, 1 foot SLR or 70-foot offset from bluff toe to development or infrastructure).

Provide option to private landowners to voluntarily remove existing armoring and receive a buyout of property as feasible. Evaluate and implement relocation of public infrastructure as necessary. Assure protection of public access to and along the shoreline, consistent with the Public Access Plan required under Hazard Policy xx.

Sharp Park, West Fairway Park and Mori Point

Most of this area is armored. The northern section between the pier and Paloma is subject to frequent wave overtopping and damage to homes has occurred. Beaches are narrow and ephemeral, with armoring impeding lateral access from the degraded vertical access ways. South of the pier, the beach tends to be more persistent and wider, and there is usually an accessible beach in the vicinity of the end of Clarendon, with reliable vertical and lateral beach access. South of Clarendon to Mori Point, the beach persists although wave run-up can reach the levee and there is some armoring. This sub-area is exposed to flooding due to rainfall runoff which cannot flow directly to the ocean. The Clarendon area is exposed to flooding now, and the West Fairway development may be exposed to flooding if sea-level and ground water levels rise over 3 feet. Due to the potential lead time of establishing a sand source, beach nourishment planning should begin immediately. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased.

Flood protection is already needed for homes and businesses along Clarendon Avenue during rain events and will need to be improved around the SPGC to manage flooding of Laguna Salada regardless of the condition of the SPGC berm. San Francisco is expected to maintain the SPGC berm which protects the Sharp Park neighborhood from the coastal flooding source, but existing pumping facilities in SPGC are not designed to mitigate flooding in and around the course during significant rainfall events (i.e., a portable pump station is currently used to manage rainfall-runoff flooding along Clarendon Avenue). The priority recommendations for flood protection surrounding SPGC are therefore based on the rainfall (fluvial) flood source, but would also be effective during a major coastal storm if the SPGC berm is overtopped or breached. Flooding due to wave run-up landward of Beach Boulevard seawalls is already an issue. If the seawalls are not properly maintained and upgraded in the future to accommodate higher sea-levels, private landowners will need other mechanisms to adapt to flood risks such as raising homes.

In absence of any armoring or beach nourishment, managed relocation of private property by private property owners (optional) and realignment of public infrastructure will be needed by 2050. Timing is dependent on presence and condition of coastal armoring structures, location of built assets relative to the bluff edge and or flood hazard zone, willingness of property owners to engage in managed retreat, and availability of public funding for relocation of public infrastructure.

Hazard Policy 27 (Sharp Park Golf Course).

Coordinate with the City of San Francisco to maintain the Sharp Park Golf Course berm and armoring, consistent with coastal development permit 2-17-0702; support adaptation planning for the course, and protect public access.

Hazard Policy 28 (Shoreline Protection: 2020-2030, 0 feet SLR).

Maintain and expand shoreline structure to protect public infrastructure. Extend the Beach Boulevard seawall to the Sharp Park Golf Course berm. Mitigation shall be provided consistent with the City's Shoreline Mitigation Plan.

Hazard Policy 29 (Shoreline Protection/Structure Elevation: 2030-2050, 0-2 feet SLR).

Upgrade existing shoreline structures to limit wave overtopping unless beach nourishment strategies are effective in reducing wave run-up on the backshore. Elevate structures as necessary to mitigate flood damage, consistent with existing height limitations.

Hazard Policy 30 (Monitoring, Utilities and Public Safety: 2050-2100, 2 feet SLR).

Monitor public safety and wave hazards. Relocate or abandon utilities as necessary and consider closing Beach Boulevard as necessary to protect public health.

Hazard Policy 31 (Beach Nourishment: 2020-2050, 0-1 feet SLR).

Pursue beach nourishment and sand retention structures to reduce shoreline protection maintenance requirements and provide beach resources. Encourage the City of San Francisco to nourish the beach fronting the Sharp Park Golf Course berm to maintain beach widths.

Hazard Policy 32 (Flood Protection: 2020-2030, 0 foot SLR).

Construct a Clarendon Avenue stormwater basin, pump station, and interior SPGC levee to protect homes and businesses from existing fluvial storm flood hazard zone.

Hazard Policy 33 (Flood Protection: 2060-2070, 3 feet SLR).

Construct a West Fairway Park stormwater basin, pump station, and interior SPGC levee to protect western homes from future coastal/fluvial flood hazard zone.

Hazard Policy 34 (Managed Retreat/Realignment of Public Infrastructure: 2050).

Provide option to private landowners to voluntarily remove existing armoring and receive a buyout of property as feasible. Evaluate and implement relocation of public infrastructure as necessary. Assure protection of public access to and along the shoreline, consistent with the Public Access Plan required under Hazard Policy xx.

Rockaway Beach, Quarry and Headlands

The armoring near the end of Rockaway Blvd is overtopped by waves under present conditions, with occasional damages. Hence, this area has very little capacity and will have a noticeably degraded condition with as little as one foot of sea-level rise. There is no beach in this area, with waves crashing directly into the armor structures. The shore becomes more accessible with distance northward but will also be more limited with as little as 1 foot of sea-level rise. The south end of rockaway is unarmored, has a persistent beach and the backshore is estimated to will be impacted with about 2 feet of sea-level rise.

Due to the cove configuration of Rockaway Beach, it is a great candidate for beach nourishment. Policies recommend that Rockaway be used as a pilot project for beach nourishment in Pacifica. In the pilot project, the City will go through the overall process for beach nourishment and identify available sources in the region and

corresponding sediment characteristics and costs, evaluate the performance of the nourishment and enable the City to reevaluate nourishment along northern Pacifica and perform a more thorough assessment for a larger scale nourishment project.

Hazard Policy 35 (Shoreline Protection: 2020-2030, 0 feet SLR).

Existing public shoreline structures along the north cove shall be upgraded for public safety and hazard reduction.

Hazard Policy 36 (Shoreline Protection: 2050-2060, 2-3 feet SLR, or when backshore is 100 feet of Highway 1).

Coordinate with Caltrans to plan and install a revetment or other appropriate shoreline protection for the Highway 1 embankment if necessary.

Hazard Policy 37 (Public Access: 2020-2050).

Plan and provide for enhanced public access, consistent with the City's shoreline mitigation plan.

Hazard Policy 38 (Beach Nourishment/Public Access: 2020-2030, 0 feet SLR).

Plan and implement beach nourishment for Rockaway Beach. Monitor and measure performance and any reduction of shoreline structure maintenance needs. Establish mechanisms through the shoreline mitigation plan to receive beach impact mitigation monies from other sub-areas of the City.

Hazard Policy 39 (Development Setbacks: 2020-2030, ongoing).

Implement new development shoreline setbacks consistent with Hazard Policy xx.

Hazard Policy 40 (Transfer of Development: 2020-2100, ongoing).

Evaluate and implement as feasible a transfer of development credit program for private property at the Quarry and Headlands.

Hazard Policy 41 (Managed Retreat/Realignment: 2060-2100, 2-3 feet SLR).

Provide option to private landowners to voluntarily remove existing armoring and receive a buyout of property as feasible. Evaluate and implement relocation of public infrastructure as necessary. Assure protection of public access to and along the shoreline, consistent with the Public Access Plan required under Hazard Policy xx.

Pacifica State Beach & West Linda Mar

Adaptation policies for Pacifica State Beach and West Linda Mar are presented together because actions taken at Pacifica State Beach influence coastal hazard exposure to West Linda Mar. Much of the Pacifica State Beach sub-area has a persistent, relatively wide beach with bulkheads in the south transitioning to dune fields in the north. Hence, this shore and roadway can withstand at least 2 feet of sea-level rise. However, the West Linda Mar sub-area east of Highway 1 has a low elevation and is subject to flooding from high creek flows and rising groundwater associated with sea-level rise. Due to the existing beach widths in Pacifica State Beach and existing coastal armoring, armoring actions are not a near term priority. However, conditions of existing armoring at the

Anza pump station should be monitored to ensure protection in the near term. Nourishment of Pacifica State Beach should be initiated using the shoreline-backshore offset for the main parking lot. Beach nourishment projects should include dune restoration to maintain ecology, protect the sewer force main that is buried in existing dune field north of the main parking lot/Anza pump station as well as provide flooding protection of Highway 1 and West Linda Mar. Pump stations at Pacifica State Beach are vulnerable to wave run-up and require floodproofing in place. West Linda Mar neighborhood is also vulnerable to flooding from San Pedro Creek based on existing FEMA hazard maps and will become more vulnerable as SLR increases the flood levels in the creek via its ocean boundary condition. West Linda Mar neighborhood was constructed in a former lagoon and experiences groundwater issues in the lowest areas, which is evident by existing wetlands around the skate park and homes furthest west. Groundwater in low areas near the ocean are directly influenced by the sea-level, and thus groundwater issues will increase with SLR.

Hazard Policy 42 (Shoreline Protection: 2050-2060, 2 ft SLR or 100 foot offset from shoreline to infrastructure).

Evaluate beach conditions and consider shoreline protection to protect parking and the Linda Mar pump station as necessary.

Hazard Policy 43 (Highway One Protection: 2050).

Coordinate with Caltrans to evaluate options for protecting Highway 1, if necessary.

Hazard Policy 44 (Beach Nourishment: 2050-2060, 2 ft SLR or 100 foot offset from shoreline to infrastructure).

Evaluate beach conditions and implement beach nourishment as necessary to maintain 100-foot buffer seaward of the sewer force main and/or Highway 1. Repeat nourishments as needed.

Hazard Policy 45 (Flood Protection: 2020-2030, 0 feet SLR).

Analyze need for floodwall along commercial property to manage flooding from San Pedro Creek under existing conditions with SLR allowance. Future flood studies that include climate-driven changes in precipitation should inform any floodwall design. Floodproof Anza pump station (stormwater) to mitigate existing coastal storm flooding vulnerabilities to wave run-up.

Hazard Policy 46 (Flood Protection: 2050-2060, 2 feet SLR or 100-foot offset from shoreline to infrastructure).

Floodproof the Linda Mar pump stations (sewer and stormwater) to mitigate future coastal storm flooding vulnerabilities to wave run-up as necessary.

Hazard Policy 47 (Groundwater Management: 2030-2050, 0-2 feet SLR).

Begin groundwater monitoring to determine needs for dewatering wells in the lowest portions of the West Linda Mar neighborhood.

Hazard Policy 48 (Managed Retreat/Realignment: 2050, 2 feet SLR).

Provide option to private landowners to voluntarily remove existing armoring and receive a buyout of property as feasible. Evaluate and implement relocation of public infrastructure as necessary. Assure protection of public access to and along the shoreline, consistent with the LCP and Shoreline Mitigation Plan required under Hazard Policy xx.

Pedro Point and Shelter Cove

Potential bluff erosion may reach the most seaward bluff top homes at Pedro Point by about 2050 with 1 to 2 feet of sea-level rise. Private property is mostly armored along the water (boat docks/homes) but require upgrades by property owners, while bluff top properties have limited ability to prevent bluff toe erosion due to parcel limits. Private property is vulnerable to bluff erosion, but implementing bluff toe armoring would be complicated due to land ownership

Hazard Policy 49 (Shoreline Structure Upgrades).

Allow replacement and upgrades of existing shoreline structures to reduce hazards and resource impacts. Mitigate impacts consistent with the City's shoreline mitigation program.

Hazard Policy 50 (Managed Retreat/Realignment: 2050-2100, 100 feet offset from bluff edge to development or infrastructure).

Provide option to private landowners to voluntarily remove existing armoring and receive a buyout of property as feasible. Evaluate and implement relocation of public infrastructure as necessary. Assure protection of public access to and along the shoreline, consistent with the LCP and Shoreline Mitigation Plan required under Hazard Policy xx.

Hazard Policy 51 (Flood Protection: 2030-2040, 0-1 feet SLR).

Allow private property owners to raise homes and other structures above wave run-up hazard, consistent with height limitations.

Standard Policies for New Shoreline Development

Hazard Policy 52 (Coastal Hazard Report).

Development proposed in coastal hazard zones shall include coastal engineering, geomorphology and other relevant technical reports unless on-site hazards already identified in a recent hazard map or assessment are adequate for evaluating and ensuring compliance with the LCP, including through use of permit conditions to address any uncertainty. Reports shall be prepared by a licensed civil engineer other suitably qualified professional; use the best available science; consider the impacts from the high projection of sea-level rise for the anticipated duration of the proposed development; demonstrate that the development will avoid or minimize impacts from coastal hazards; and evaluate the foreseeable effects that the development will have on coastal resources over time. Reports may be waived for temporary events, structures or other minor, short-term development where it is clear there will be no hazard risks over the project's life.

Hazard Policy 53 (Land Divisions).

Land divisions that create new development potential in hazard zones, including lot splits, lot line adjustments and conditional certificates of compliance, are prohibited.

Hazard Policy 54 (Siting and Design).

New development in shoreline coastal hazard zones, including substantial improvements of existing structures, shall be sited and designed to be safe from erosion, bluff failure, wave runup, flooding and other coastal hazards for at least 100 years without existing or new shoreline

protection, considering projected sea-level rise and other climate change effects. Permit approvals shall prohibit shoreline protection for the authorized development, require the property owner to record an acknowledgement that the development does not qualify as a structure entitled to shoreline protection under Coastal Act Section 30235, and a waiver of any rights to such protection, and where necessary require a removal and restoration plan, including bonding for large projects, to avoid future shoreline protection or project failure.

Hazard Policy 55 (Assumption of Risk by Private Landowners).

Permit approvals of development in coastal hazard zones shall require the applicant to record a deed restriction acknowledging and agreeing: 1) that the development is located in a hazardous area, or an area that may become hazardous in the future; 2) to assume the risks of injury and damage from such hazards in connection with the permitted development; 3) to unconditionally waive any claim of damage or liability against the City of Pacifica, its officers, agents, and employees for injury or damage from such hazards; 4) to indemnify and hold harmless the City of Pacifica, its officers, agents, and employees with respect to approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; 5) that sea-level rise could render it difficult or impossible to provide services to the site (e.g., maintenance of roadways, utilities, sewage or water systems), thereby constraining allowed uses of the site or rendering it uninhabitable; 6) that the boundary between public tidelands and private land may move inland causing the structure to be located on public land and thus subject to removal unless otherwise authorized by the Coastal Commission and State Lands Commission; and 7) that the structure may need to be removed or relocated if it becomes unsafe or substantially damaged.

Hazard Policy 56 (MHTL and Avoidance of Public Trust Lands).

Applications for low-lying development adjacent to coastal waters shall include a Mean High Tide Line (MHTL) survey of the development site prepared by a licensed professional land surveyor based on field data collected within 12 months of the date submitted. The survey shall be conducted in consultation with and approved by the California State Lands Commission (CSLC) staff. Development shall be sited to avoid public trust lands for the its approved duration, unless otherwise authorized by the California State Lands Commission and Coastal Commission. New MHTL surveys shall be submitted every ten years or within one year of a new tidal datum epoch, seismic event in the project area greater than 5.5, or significant relative rise in annual local mean sea-level records.

Hazard Policy 57 (Bluff Face Development).

Structures, grading, and landform alteration on bluff faces are prohibited, except for the following: public access structures where no feasible alternative means of public access exists, and shoreline protective devices if otherwise allowed by the LCP and the public access and recreation policies of the Coastal Act. Such structures shall be designed and constructed to be visually compatible with the surrounding area to the maximum extent feasible and to minimize effects on erosion of the bluff face.

Hazard Policy 58 (Minor Development in Hazardous Areas).

Minor and/or ancillary development, including public trails, benches, gazebos, patios, etc., may be located seaward of a bluff or shoreline setback line provided that development is otherwise consistent with the LCP, does not create a hazard, and does not use a foundation that can serve as a bluff retaining device, such as caissons, or that requires landform alteration, and that the

development is removed or relocated by the landowner when threatened or in the event that portions of the development fall to the bluffs, beach or ocean.

Hazard Policy 59 (Non-conforming Structures in Hazardous Areas).

When proposed development would involve substantial improvement of an existing structure that is legally non-conforming with an LCP standard, including bluff setbacks or other hazard criteria, the entire structure must be made to conform with the LCPs and, if applicable, the Coastal Act. Non-exempt improvements to existing non-conforming structures, regardless if the proposed improvements meet the thresholds for redevelopment, shall not increase the degree of non-conformity of the existing structure by, for example, increasing the hazardous condition, developing seaward, or increasing the size of the structure in a non-conforming location.

Hazard Policy 60 (Protection of Private Property in Hazardous Areas).

Where full adherence with all LCP policies, including for setbacks and other hazard avoidance measures, would preclude a reasonable economic use of the property as a whole, the City may allow the minimum economic use and/or development of the property necessary to avoid an unconstitutional taking of private property without just compensation. There is no taking that needs to be avoided if the proposed development constitutes a nuisance or is otherwise prohibited pursuant to other background principles of property law (e.g., public trust doctrine). Continued use of an existing structure, including with any permissible repair and maintenance (which may be exempt from permitting requirements), may provide a reasonable economic use. If development is allowed pursuant to this policy, it must be consistent with all LCP policies to the maximum extent feasible.

Hazard Policy 61 (Habitat Sea-level Rise Migration Buffers).

A sea-level rise buffer area shall be added to required new development habitat buffers if necessary to allow for the migration of wetlands and other shoreline habitats caused by sea-level rise over the anticipated duration of the development. Except for temporary uses, as described below, uses and development within sea-level rise buffer areas shall be limited to minor passive recreational uses, with fencing, de-siltation or erosion control facilities, or other improvements deemed necessary to protect the habitat, to be located in the upper (upland) half of the buffer area. Water quality features such as drainage swales required to support new development shall not be constructed in wetland buffers. Temporary uses may also be placed in the sea-level rise buffer area until such time as sea-level rise causes the wetlands or other shoreline habitat to migrate to within 100 feet of the temporary uses, at which time, they shall be removed. All habitat and buffers identified shall be permanently conserved or protected through a deed restriction, open space easement or other suitable device.

Hazard Policy 62 (Stormwater and Dry Weather Flows).

New development shall provide adequate drainage and erosion control facilities that convey site drainage in a non-erosive manner to minimize hazards resulting from increased runoff and erosion. Runoff shall be directed inland to the storm drain system or to an existing outfall, when feasible. If no storm drain system or existing outfall is present, blufftop runoff shall not be channelized or directed to the beach or the ocean.

Hazard Policy 63 (Reduction of Greenhouse Gases).

New development shall include solar panels and, as appropriate, other energy reducing techniques to minimize greenhouse gas emissions, consistent with community character, coastal views and protection of biological resources.

Standard Policies for Shoreline Structures

Hazard Policy 64 (Soft Shoreline Protection).

Encourage the use of soft or natural shoreline protection methods, such as dune restoration and beach/sand nourishment as alternatives to hard shoreline protective devices. Soft shoreline protection devices shall be fully evaluated for coastal resource impacts, and shall only be approved if found consistent with the LCP policies related to shoreline protection. Consider combining beach replenishment with groin construction to maintain beaches and protect development (see subarea policies).

Hazard Policy 65 (Beach Nourishment).

In coordination with the Coastal Commission and other permitting agencies (e.g., State Lands Commission, U.S. Army Corps of Engineers), the City shall develop and implement a beach nourishment program in conjunction with sand retention structures to assist in maintaining beach width and elevations, consistent with subarea policies. The beach nourishment program will include measures to protect water quality and to minimize and mitigate potential adverse biological resource impacts from deposition of material, including measures such as sand compatibility specifications, restrictions on volume of deposition, timing or seasonal restrictions, and identification of environmentally preferred locations for deposits. The City will also consider developing an opportunistic sand program and evaluate how replenishment options may need to change over time with sea-level rise.

Hazard Policy 66 (Existing Shoreline Structures).

Except as may be otherwise provided in the LUP subarea policies, legally permitted shoreline protection structures may be repaired and maintained until the development they are protecting is removed or substantially improved, at which time the shoreline protection shall be reevaluated for consistency with LCP. Repair and maintenance activities shall not result in any enlargement or extension of the structure, or any seaward encroachment or impairment of public trust resources, and shall provide mitigation for any new coastal resource impacts not previously or otherwise mitigated through the City's Shoreline Mitigation Program. Expansion, augmentation or replacement of 50 percent or more of the protective structure (by volume, linear (height or length) or areal extent) constitutes a new shoreline structure and shall comply with all policies of the LCP.

Hazard Policy 67 (New Shoreline Structures).

Unless a waiver of rights to shoreline protection applies on the property, shoreline protection structures, including revetments, breakwaters, groins, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted consistent with the LUP's sub-area policies when required to serve coastal-dependent uses or protect existing principal structures or public beaches in danger from erosion, when designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and when there is no less environmentally damaging feasible alternative such as relocation of the threatened development, beach nourishment, non-structural drainage and native landscape improvements, or other similar non-structural options. For purposes of this policy "existing principal structures" means

principal structures that were legally authorized prior to January 1, 1977 [or March 24, 1980; or date of LUP Update Certification] that have not since undergone redevelopment.

Hazard Policy 68 (Authorization Limits of New Shoreline Structures, 30235; Coastal Act).

Unless otherwise directed in a subarea policy, shoreline protection structures shall only be authorized until the time when the existing principal structure or adjacent structure that is protected by such a device: 1) is no longer present; 2) no longer requires armoring; or 3) is substantially improved.

Hazard Policy 69 (Mitigating Impacts of New Shoreline Structures).

Necessary shoreline structures shall be sited and designed to avoid sensitive resources to the maximum extent feasible. Adverse coastal resource impacts shall be fully mitigated, including impacts on sand supply, beach area, public access (vertical access to the shore and horizontal access along the shore and blufftop) and recreational use (surfing, fishing, hiking, etc.), public trust lands and values, ecological function, water quality, shoreline aesthetics, and cultural resources. Mitigation options shall include consideration of providing equivalent new public access, recreation, habitat or other coastal resource in the vicinity of the project, or if such options are not feasible, proportional in-lieu fees that consider and reflect, to the maximum extent practicable, the full value of lost resources for the approved lifetime of the project. Any fees shall be deposited in an interest-bearing account held by the City of Pacifica for use within the city limits for mitigation of the specific impact identified in the project approval. If unused after ten years, such fees may be used, including in combination with other similar fees, in San Francisco or San Mateo Counties to mitigate the impacts of shoreline structures generally. This policy may be met through compliance with the City's Shoreline Mitigation Program pursuant to Hazard Policy xx.

Hazard Policy 70 (Monitoring Plan for New Shoreline Structures).

Proposals for new, replacement or repaired shoreline protection structures shall include a monitoring plan that evaluates the condition of the structure, conditions at the site and surrounding area, and whether the shoreline protection structure is still needed for protection. The plan shall require an inspection at least every five years to identify: any structural damage and need for repair; environmental impacts, including excessive scour, impacts to shoreline processes and beach width (at the project site and the broader area and/or littoral cell as feasible), and impacts to public access and the availability of public trust lands for public use; and the status of the structure being protected. At least every 15 years the landowner shall submit a new Mean High Tide Line (MHTL) survey of the Subject property based on field data collected within 12 months of the date submitted. Surveys shall comply with Hazard Policy xx.

Standard Policies for Coastal Flooding and other Hazards

Hazard Policy 71 (Flooding).

New development in flood hazard zones shall be avoided. If relocation of existing development in hazard zones is infeasible, substantial improvements shall be sited and designed to be safe from flooding, and without adverse offsite effects, for at least 100 years, considering projected sea-level rise and future flooding, including at least the 1% probability event. Design requirements shall include raising finished floor elevations of habitable space above projected flood

elevations; storing hazardous materials out flood areas; elevating mechanical and utility installations; prohibiting basements; and using flood vents and anchoring structures where appropriate. Structure elevations shall be limited to ensure consistency with LCP visual and community character policies and assure access to utilities over the duration of the development.

Hazard Policy 72 (Flood Risk Reduction).

The City shall evaluate and pursue floodproofing of infrastructure and other development in danger from projected flooding in 2050. Allow and facilitate private owners to floodproof structures, consistent with other LCP policies.

Hazard Policy 73 (Repetitive Loss).

The City shall monitor repetitive flooding loss and FEMA claims to assist in identification of priorities for adaptation measures, including acquisition of high-risk properties.

Hazard Policy 74 (Steep Slopes and Landslides).

New development shall minimize siting on steep slopes and in areas prone to land sliding. Development on slopes over 35% is prohibited.

Hazard Policy 75 (Seismic Hazards).

New development shall be sited and designed to minimize risks from seismic events. Buildings for human occupancy shall avoid surface traces of active faults, consistent with the Alquist-Priolo Act and other relevant state law.

Hazard Policy 76 (Tsunami Hazards).

New development shall consider and minimize risks from in identified tsunami run-up zones. Measures may include signage and education, evacuation plans, warning systems and other mitigations of tsunami risks.

Hazard Policy 77 (Bluff Drainage and Erosion).

The City shall investigate areas that may be significantly contributing to groundwater flows to the bluffs and determine whether improving drainage and/or reducing irrigation could reduce bluff erosion. Measures to improve drainage and reduce over-watering shall be communicated to the public and property owners as part of existing water conservation outreach programs, and included as conditions on new development where applicable.

REFERENCES

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August 31, 2018

Tina Wehrmeister
Planning Director
City of Pacifica
1800 Francisco Blvd.
Pacifica, CA 94044

Subject: City of Pacifica Draft Land Use Plan (LUP) Hazard Policies

Dear Ms. Wehrmeister:

This letter is in response to the City of Pacifica's request for comments on the "Proposed Updated Draft LUP Hazard Policies" provided to us in a memo from ESA to the City (entitled "Sea-Level Rise Policy Options for Pacifica LCP Update" and dated August 24, 2018). We note that we received this document just this week, and you have requested comments by today. As discussed with you, due to that abbreviated timeline of just a few days, we won't be able to provide final or comprehensive comments, but we are happy to provide some preliminary thoughts and some broader observations regarding the current proposed policies. We look forward to continued dialogue on the policies, including with respect to refinements identified herein.

Overall, the proposed policies appear to provide a solid framework for advancing the City's sea level rise adaptation efforts, which will be critically important in the coming decades. As is identified in its Sea Level Rise Vulnerability Assessment (June 2018), the City of Pacifica is already vulnerable to storm and wave impacts, including as evidenced by the loss of residential structures in recent years, and efforts to protect against such impacts have resulted in narrowed or completely inundated beaches backed by armoring where access can be largely unavailable at higher tides. These hazards are only expected to increase as sea levels rise, resulting in significant loss of public recreational beach resources and shoreline-area habitats, as well as damage to and loss of residential and commercial structures, and transportation, stormwater, and wastewater infrastructure. In particular, given its beaches are a fundamental backbone and significant part of the City's social fabric and economic engine, it is critically important for the policies to reflect the importance of the City's beaches, and to be transparent (and provided appropriate mitigations) where the policies might lead to increased impacts to same.

To this end, the proposed policies address the need to ensure that new development is sited and designed to be safe from coastal hazards and to avoid the need for armoring, and the policies provide many key mechanisms for future steps to take as sea level rise advances over time, including interim protection measures, beach nourishment, and eventual managed retreat in

certain locations. We want to commend the City for tackling such difficult issues head-on, and for starting to identify practical and substantive measures to address such issues moving forward. At the same time, although many important sea level rise planning provisions are addressed in the proposed policies, and they provide a good foundation for the LCP update, we also believe that many important details will require refinement moving forward, including to ensure that the proposed policies are logical, feasible, realistic, and consistent with the Coastal Act. We look forward to working together with the City to refine this work so that it achieves Coastal Act and City objectives related to minimizing hazards and protecting coastal resources, even as sea level rises.

In the interim, and in drilling down a bit into the proposed policies, the current draft includes effective and important policies that address planning and accounting for coastal hazards longer term, but appear to require some focus on the shorter term horizon. For example, the "Standard Policies for New Development," "Shoreline Structures," and "Coastal Flooding and Other Hazards" sections provide policies for long-term planning throughout the City that should help ensure new development will be safe from current and future vulnerabilities and protective of coastal resources. However, we continue to have the same concerns that we have previously relayed to the City regarding how existing development will be addressed going forward in a manner that ensures beaches, habitat, public access, and recreation will be preserved for current and future generations, as required by the Coastal Act. Part of the challenge before us in refining the policies will be to make sure that the shorter term and longer term policies interact and seamlessly move towards similar objectives, and aren't somehow at cross-purposes.

In addition, as you know we have previously identified issues associated with potential policy preparation as the City has worked through its Draft Adaptation Plan (including through meeting with you and your staff throughout this year as well as letters dated June 12, 2018 and August 29, 2018). One of our primary concerns was ensuring that such policy preparation was based on a detailed assessment of the feasibility and costs/benefits of different adaptation alternatives, and it is not clear that this sort of information has been fully developed. No matter what policies are ultimately proposed, it will be critical for decision-makers, both at the City and Commission level, to have the benefit of that sort of information as they weigh potential policy approaches. We would be happy to work with you and your staff as this effort proceeds locally to ensure that such background is clearly provided.

In terms of more specific comments on the draft policies, here are some preliminary observations:

- The proposed policies rely heavily on beach nourishment as a key adaptation strategy. Although we believe that nourishment is an appropriate strategy to evaluate and pursue, we also believe that the information that could underpin such a strategy needs to be further fleshed out. As we have discussed previously, the technical analysis and supporting information regarding potential feasibility and effectiveness of beach nourishment (and also sand retention structures) needs to be better developed (including in relation to different grain sizes and the effects of sand retention structures on erosion in other areas), particularly to support it as a primary adaptation strategy through the proposed policies. In short, we think that policies that rely so heavily on nourishment, particularly in the shorter term, need to be

supported by more thorough data.

- The proposed policies refer to developing a "Shoreline Mitigation Program" in the future to address impacts associated with hazard response. The policies are going to need to be able to be structured to address such impacts *now*, and many policies seem to imply that is their intent. It may be appropriate to identify development of a future mitigation program as a refinement and a next step, but it needs to be clear that this does not negate the need for mitigation in the interim.
- It may be appropriate to reformat and reorganize the policies. For example, the "Standard Policies" sections from pages 14-19 account for the overarching approach for new development and substantial improvements to existing development, in all areas throughout the City, and in both the short- and long-term. It may make better sense to move these to the beginning. Additionally, although we understand the policy construct that suggests that general policies may be superseded by more specific policies for each sub-area, we are concerned that some of the more specific policies appear to be making prescriptions for outcomes that are not based on analysis (e.g., allowed armoring). It is not appropriate, in our view, to have policies state conclusions that have not yet been supported by analysis, and it may be that the overarching policies are required to take precedence in that regard unless and until conclusions can be drawn in that manner.
- The policies appear to be looking to the 2040 horizon as 'longer term', and this seems an appropriate framework. We would encourage a close review to ensure that policies referring to other time frames (e.g., 20-year approvals) are understood in terms of this horizon, including to ensure that development years out also times to the same horizon.
- It appears that some critical policy language is missing from some of the draft policies. Please ensure that the following are addressed:
    - Please provide design standards for the construction of shoreline protection devices (e.g., they must: blend with natural environment; avoid significant habitat areas; minimize footprint; protect, and where feasible, provide public access; control erosion from surface and groundwater flows; etc.).
    - Please identify specific details regarding how proportional mitigation for all unavoidable impacts of shoreline protection devices to coastal resources (e.g., shoreline sand supply, recreation, public views, and water quality) is to be measured and applied.
    - Please ensure that the policies require removal of shoreline protection devices when they are no longer required to protect existing structures in danger from erosion, including when structures are demolished and then rebuilt, or redeveloped.
    - Please define what constitutes "substantial improvements" to ensure that current development is brought into compliance with the policies as it is renovated and redeveloped. We have previously identified appropriate standards for such a definition, and would be happy to provide that again.
- Certain themes, concepts, and terms used throughout the draft policies need to be better defined, including as follows:
    - Please better describe how the triggers would be implemented (e.g., trigger for when armoring/nourishment etc. would be implemented when the bluff offset reaches the

specified distance, or whether the specified distance triggers a different approach). In addition, please explain how the years and amounts of sea level rise pertain to the offset values and describe how beach width and bluff offsets will be measured.

- Please explain how the hazard areas referenced in the policies will be defined, including the coastal hazard zones, coastal hazard maps, flood hazard zones, and tsunami run-up zones. In addition, for particular hazard areas that will be mapped, we recommend that the City add timeframes for how often these maps must be updated and include contingencies in the event that they are not updated by the prescribed deadline.
- Please discuss how height limitations will be accounted for if/when structures need to be elevated to meet FEMA base flood levels in some areas.
- Please further expound upon what constitutes current "best available science" and whether there is a different standard for what amount of sea level rise should be evaluated in geotechnical studies versus what amount of sea level rise new development must be sited/designed to be safe from. For example, consider specifying that all new development must evaluate, at a minimum, the medium-high projection scenario (from the 2018 OPC Sea-Level Rise Guidance and in line with the Draft 2018 Science Update to the CCC SLR Policy Guidance) over its anticipated lifetime, but that if new development cannot be sited to avoid impacts over that time period certain minimum standards must be met (similar to the policies related to takings). We would be happy to work with the City on this topic.
- References to hazard policies are made without those specific policies' reference numbers included. Please update the references accordingly.

Again, we appreciate and commend the City on developing these draft policies and the related policy framework, and look forward to helping to refine the policies and approach through our ongoing collaboration on the City's LCP update. It is clear from these policies that the City is taking the issues and problems associated with coastal hazards seriously, and in a way that advances the City's approach to sea level rise and LCP planning. We hope these comments help move us forward in that regard. If you have any questions or would like to discuss these matters further, please don't hesitate to contact me or Patrick Foster of my staff. Again, we greatly appreciate the ability to be a part of this important planning process and look forward to continued coordination and discussion of this important effort.

Sincerely,

Jeannine Manna
North Central Coast District Manager
California Coastal Commission

cc: Bonny O'Connor, City of Pacifica Planner

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memorandum

date	August 24, 2018
to	Bonny O'Connor, AICP
cc	Tina Wehrmeister
from	James Jackson, PE; Charles Lester, PhD, JD; Bob Battalio PE
subject	Sea-Level Rise Policy Options for Pacifica LCP Update

Summary

This memo presents recommended Local Coastal Program (LCP) policies to address projected sea level rise and its potential impact on coastal development and resources within the City of Pacifica. The following policy update is consistent with the recommended adaptation strategies from the Final Draft Adaptation Plan, City Council goals, and community input. These policies recognize that sea level rise projections are continually evolving and the effectiveness of hybrid adaptation strategies is not well known. ***Therefore, consistent with the City Council's goals, particularly to preserve existing neighborhoods and promote environmental justice and local economic vitality, the policies focus on protection and armoring of the shoreline and reassessment of the adaptation plan in the future.***

These draft policies are available for public comment and may be revised based on comments received prior to Planning Commission and City Council consideration. The City approved adaptation policies will later be incorporated into a Draft LCP and provided to the Coastal Commission for certification. Only when the LCP is certified by the Coastal Commission and then adopted by the City Council will these policies be effective.

LCP Background

Pacifica's Local Coastal Program (LCP) guides development and protects coastal resources within the Coastal Zone. LCPs must be consistent with the California Coastal Act of 1976, as amended. Pacifica's LCP is made up of two parts: the Land Use Plan (a compilation of goals, policies, and recommended programs) and the Implementation Plan (regulations and zoning district maps that implement the provisions of the Land Use Plan) (City of Pacifica, 1980; 1994; 2017). The Implementation Plan has been codified into Pacifica's municipal code as individual sections (Chapter 4, Articles 43 and 44) in Title 9 Planning and Zoning (City of Pacifica, 2017).

The California Coastal Act aims to protect coastal resources, including to ensure that public access to and along the shoreline is provided and maintained; that water quality, marine life, and environmentally sensitive habitat areas are protected; and that coastal visual resources and special communities are preserved. The Coastal Act also calls for certain land uses within the Coastal Zone to have priority over other uses: recreation and visitor-serving uses, fishing, boating, and other coastal-dependent uses, and public works needed to support priority uses.

Pacifica's current Land Use Plan was certified in 1980. The Land Use Plan includes the following main sections:

- The California Coastal Act policies in effect at the time the Land Use Plan was adopted
- Land use designation maps organized by neighborhood, and land use designation definitions
- Neighborhood map of six coastal neighborhoods
- A detailed description of existing conditions, development criteria, and coastal access policies for each coastal neighborhood
- A detailed description of each existing or proposed beach access point
- Policies addressing a range of topics, including habitat protection, geotechnical hazards, coastal views and viewsheds, housing, etc.

Pacifica's current Implementation Plan was adopted in 1994 (and has been amended as recently as 2017) and establishes regulations that address permit requirements and procedures for development in the coastal zone. It also creates a Coastal Zone Combining District that serves as an overlay to the underlying zoning districts, to protect sensitive coastal resources, ensure public shoreline access, protect environmentally sensitive habitats, address geotechnical suitability, grading and drainage, and shoreline protection, and maintain coastal view corridors and neighborhood commercial districts.

In 2009, the City of Pacifica initiated a comprehensive update to its General Plan and LCP. A draft updated LCP Land Use Plan was prepared that includes background information and policies for the following themes: land use and development, public access and recreation, environmental and scenic resources, and natural hazards (City of Pacifica, 2014). However, no enacting decision was made on the draft LCP Land Use Plan.

Subsequently, California Senate Bill 379 was passed and required all cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans upon the next revision beginning January 1, 2017. The Governor's Executive Order No B-30-15 also directed state agencies to factor climate change into planning decisions. ~~This order has been promulgated by~~ Similarly, the California Coastal Commission adopted its Sea Level Rise Policy Guidance in, and has been endeavoring to ensure that vulnerability assessments and adaptation plans form the basis for ~~to be included in~~ Local Coastal ~~Plan~~ Program updates related to coastal hazards. The City Council will determine the most appropriate policies for Pacifica,

then the LCP Update will be forwarded to the Coastal Commission for certification.

PROPOSED UPDATED LAND USE PLAN COASTAL HAZARDS POLICIES

General Policies

Hazard Policy 1 (Key Coastal Act Policies).

The City of Pacifica adopts the following key policies derived from the Coastal Act to address coastal hazards:

> ***PRC 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.*
>
> ***PRC 30253****. New development shall: (1) minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (2) 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; and,*

The updated LCP and sub-area adaptation policies adopted herein are intended to achieve and ~~are~~ be consistent with these key policies, subject to periodic updating as resource and development monitoring and program implementation may dictate. In cases where there are policy interpretation questions, any conflicts or questions shall be resolved in favor of the interpretation that most closely follows PRC Sections 30235 and 30253.

Comment [A1]: 30235 and 30253 should be presented in order.

Hazard Policy 2 (Sea-level Rise and Best Available Science).

Planning and development reviews in the City of Pacifica shall use, as applicable, the best available science about projected sea-level rise and other climate-change related environmental changes when addressing coastal erosion, bluff failure, flooding and other coastal hazards.

Hazard Policy 3 (Hazard Identification and Mapping).

The City's coastal hazard zones shall be mapped based on the best available science about projected sea-level rise, erosion, flooding, and other coastal hazards. Mapping shall be updated as necessary to guide implementation of the LCP's hazard policies. Notwithstanding the coastal hazard zone maps, site-specific hazard mapping and assessment may be required as part of the individual development review process.

Coastal Hazards and Sub-area Adaptation Policies

Hazard Policy 4 (Shoreline Adaptation Plan).

The City shall implement its Sea-level Rise Adaptation Plan (Appendix xx) as expressed in the LUP's general and sub-area coastal hazard adaptation policies. The City shall monitor implementation and~~, from time to time,~~ update the Sea-level Rise Adaptation Plan every five years or sooner to strengthen public safety, preserve existing neighborhoods, assure local economic vitality, respond to climate change, promote environmental justice, implement the Coastal Act and protect the public trust.

Development in coastal hazard zones may be approved consistent with the sub-area policies (17–44) if the following findings can be made over the expected life of the development:

a. *The proposed development is sited and designed to avoid (and where unavoidable to minimize and to mitigate) coastal hazards and impacts to coastal resources to the maximum extent feasible~~, consistent with the Adaptation Plan~~;*

b. *All project impacts are avoided (and where unavoidable minimized and mitigated) to the maximum extent feasible~~; through the City's Shoreline Mitigation Program (Hazard Policy 7) or~~ consistent with Hazard Policy 60;~~.~~*

c. *The project ~~does~~ will not pose unacceptable risks to life or property or otherwise create a nuisance; and*

d. *The project will not encroach on public trust lands.*

~~d.~~e. *The project is designed to assure stability and structural integrity absent the need for shoreline protective devices.*

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Hazard Policy 5 (Monitoring Shoreline Change).

The City shall implement a monitoring program for sea-level rise, beach width, bluff offset, flooding and storm damage, and other potential measures or triggers for guiding implementation of the LCP's shoreline adaptation policies. The monitoring program shall establish thresholds for reassessing the City's Adaptation Plan.

Hazard Policy 6 (Shoreline Adaptation Plan Update)

The City shall reassess its Sea-level Rise Adaptation Plan as expressed in the LUP general and sub-area coastal hazard adaptation policies every five years or sooner as required by the shoreline monitoring program (Hazard Policy 5). The reassessment shall consider the following:

- *Efficacy of Adaptation Plan and implemented measures.*
- *Updated sea level rise projections and risks.*
- *Potential need to revise adaptation measures or implement new measures, including review of emerging engineering, science, and technologies.*
- *Funding needs and potential funding sources.*

Hazard Policy 7 (Shoreline Mitigation Program).

Within three years of certification of the LUP update, the City shall adopt a Shoreline Mitigation Program to address the coastal resource impacts of existing and future shoreline protection projects in the City. Special emphasis shall be placed on maintaining beaches and public access

to and along the shoreline. The program will update the public access inventory of the LUP as necessary, include a coastal resource inventory and identify priority improvements for maintaining and enhancing coastal shoreline resources, particularly public access and recreation. The program will include enforceable measures to achieve proportional mitigation of

resource impacts identified in shoreline protection projects, including consideration of beach widths, sediment management plan actions, and monitoring. The program will identify potential funding sources for implementation of identified improvements. The program will include provisions for monitoring implementation and program updates as necessary.

Comment [A2]: Recommend adding back in this language from the City's first memo

Hazard Policy 8 (Adaptation Funding).

The City will ~~research and evaluate~~pursue feasible grant funding sources or new funding mechanisms, such as the formation of Geologic Hazard Abatement Districts (GHADs), or securing FEMA and other federal or state adaptation and hazard mitigation funds, to finance adaptation strategies.

Hazard Policy 9 (Transfer of Development Rights).

Use the City's transfer of development rights (TDR) ordinance to relocate development rights from coastal hazard zones (sending sites) to receiving sites outside of hazard zones. Identify areas where densities and heights may be increased using TDR credits, including to facilitate affordable housing.

Hazard Policy 10 (Critical Transportation Infrastructure).

The City will pursue opportunities to preserve and protect critical local transportation infrastructure, or provide alternative access, to mitigate against isolation, economic loss and ensure public safety, while avoiding (and where unavoidable minimizing and mitigating) impacts to coastal resources, including ~~and~~ public access and recreation, to the ~~greatest~~maximum extent feasible.

Hazard Policy 11 (Hazard Prone Infrastructure).

The City will preserve, protect, or relocate hazard prone infrastructure to maintain critical services and ~~maintain the environment~~protect coastal resources. Preservation/protection in situ with shoreline armoring shall be required to meet the requirements of Policies 57 and 58.

Hazard Policy 12 (Business Outreach).

The City's Economic Development Department shall provide technical assistance to businesses in evaluating options to promote business resiliency.

Hazard Policy 13 (High Water Program).

The City will research and evaluate feasible new funding mechanisms to implement a program to record high water marks where feasible following high-water events.

Hazard Policy 14 (Flood Ordinance Consistency).

The City will r~~R~~eview and amend as necessary the City's flood damage prevention ordinance to assure consistency with the updated policies and ordinances of the LCP.

Hazard Policy 15 (LHMP Alignment).

The City will c~~C~~oordinate City departments and programs to align the Local Hazard Mitigation Plan (LHMP) with the LCP to ensure proactive, coordinated and streamlined adaptation efforts and response to future coastal hazards. The City shall l~~L~~everage FEMA funding opportunities for hazard mitigation and other related funding mechanisms to implement the Shoreline

Adaptation Plan.

Sub-Area Policies and Programs

The following policies and programs implement the near-term sea-level rise adaptation priorities for each sub-area in Pacifica, and identify mid- and longer-term measures, subject to feasibility and monitoring concerns. These priorities were developed based on existing conditions and existing/near term vulnerabilities for each sub-area, as well as the City's adopted goals for the project that include protecting existing development as well as preserving and enhancing coastal access along Pacifica.

As required in Hazard Policy 5, the City shall monitor erosion, flooding, and sea-level rise amount into the future to identify triggers for future adaptation measures beyond initial actions required due to existing conditions. Where applicable, specific triggers are clarified in the policies.

Generally, for all lands within the 2050 Pacific Institute erosion hazard zone, utilities, roadways and other public infrastructure should be floodproofed unless other adaptation alternatives are implemented and performing well. The City should incentivize risk reduction (floodproofing etc.) that property owners can invest in, with grant funding or code updates. In addition, the City should consider floodproofing infrastructure that may be currently exposed to coastal erosion and flooding to reduce the consequences of under-performance of protection measures (construction and maintenance of shoreline structures).

The City's overall approach to addressing coastal hazards would be to site and design new development to be out of harm's way and to limit shoreline armoring as much as possible~~, and to limit shoreline armoring as much as possible~~, including to help preserve and protect the City's shoreline and beaches. At the same time, the City's program is not designed for wholesale ~~M~~managed retreat ~~is not included in any of~~of existing development in the near-term policies. Such m~~M~~anaged retreat options would be reconsidered in the mid- to long-term if feasibility and monitoring warranted, as detailed in Hazard Policy 5 and Hazard Policy 6.

Fairmont West

The roadway and utilities in Fairmont West are at risk after one to two feet of sea-level rise. Some beach width may exist for access and other coastal resources, but given the high bluffs here, there is not adequate vertical access to the beach. Due to the undeveloped conditions of the bluffs in this sub-area, armoring is not required immediately. Beach nourishment, while a lower priority for this sub-area compared to other more developed sub-areas in the City, could take place at a later date with a larger volume of sand. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased.

Hazard Policy 16 (Shoreline Structures: 0-1 foot SLR or 260-foot offset from bluff toe to infrastructure).

Shoreline protective structures shall be avoided except that the existing shoreline structures may be maintained and expanded to protect existing ~~development~~ structures in danger from erosion if found to be the least environmentally-damaging alternative and consistent with Policies 57 and 58, impacts are fully mitigated consistent with Hazard Policy 60, and any prior permit conditions and/or legal obligations pursuant to the California Coastal Act are ~~addressed~~complied with. Allow shoreline protective structures for the public road and sewer line existing structures if necessary and consistent with Policies 57 and 58. Any new blufftop

Comment [A3]: Define.

Comment [A4]: Define.

Comment [A5]: The phrase, shoreline structures, shoreline protective device, shoreline protection, seawall, and armoring, are used interchangeably throughout the document. Please use a consistent phrase to refer to shoreline protective devices. These instances are highlighted throughout

development shall comply will all LCP setback policies.

Hazard Policy 17 (Beach Nourishment: 2 feet SLR or 260-foot offset from bluff toe to infrastructure)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (see artificial headlands concept in the Adaptation Plan), to reduce shoreline protective structure

maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Repeat as necessary. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 18 (Transfer of Development Credits: ongoing).

Provide an option to private landowners to voluntarily transfer development potential as supported by Hazard Policy 9.

West Edgemar and Pacific Manor

Hazard Policy 19 (Shoreline Structures: 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development).

Maintain and expand shoreline protective structures to protect existing public infrastructure structures, including between Bill Drake Way and Manor Drive. Allow private property owners to maintain existing or construct new shoreline protective structures if allowed pursuant to Policies 57 and 58, and if consistent with prior permit conditions and/or legal obligations pursuant to the California Coastal Act. Limit authorization of all new shoreline protective structures to twenty years or 2040, whichever is sooner, and require mitigation of beach, public access and recreation and other coastal resource impacts, consistent with Hazard Policies 7 or 60 as necessary.
Consider reauthorization subject to Policies 57 and 58, as well as beach monitoring and implementation of beach nourishment and other strategies to maintain beaches.

Hazard Policy 20 (Beach Nourishment: 0-1 foot SLR or 220-foot offset from bluff toe to infrastructure or development)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (artificial headlands concept), to reduce shoreline protective structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Mitigate all adverse impacts and monitor effectiveness over time.

Northwest Sharp Park

The backshore of Northwest Sharp Park is armored but may be overwhelmed by waves with as little as one foot of sea-level rise, due to scour and shoreline structure sloughing, increased wave loads and overtopping of the shoreline structure. Beaches tend to exist ephemerally in pockets, with armoring impeding lateral access from the degraded vertical access ways. Existing property and infrastructure are at risk from coastal erosion so actions should be taken soon. A public access improvement plan should be provided, consistent with the City's Shoreline Mitigation Program (Hazard Policy 7). Due to the potential lead time of establishing a sand source, beach nourishment planning should begin immediately. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased. The effectiveness of beach nourishment will need to be monitored and, if/when erosion continues to threaten existing development or infrastructure, new adaptation measures will need to be assessed.

Hazard Policy 21 (Shoreline Structures: 0-1 feet SLR or 70-foot offset from bluff toe to development or infrastructure).

Private land owners may maintain and expand shoreline protective structures to protect existing ~~development~~ structures in danger from erosion, consistent with Hazard Policy 4 and any prior permit conditions and/or legal obligations pursuant to the California Coastal Act.

Hazard Policy 22 (Beach Nourishment: 0-2 feet SLR or 70-foot offset from bluff toe to development or infrastructure)

Evaluate the feasibility of using beach nourishment, in conjunction with sand retention structures (artificial headlands concept), to reduce shoreline protective structure maintenance requirements and maintain beaches of at least 100 feet in width on average. If feasible and approved through a coastal development permit, secure funding and implement as soon as possible. Repeat as necessary. Mitigate all adverse impacts and monitor effectiveness over time.

Hazard Policy 23 (Flood Protection: 1 feet SLR).

Enable property owners to modify development structures to manage impacts of wave run-up and overtopping of bluff face.

Sharp Park, West Fairway Park and Mori Point

Most of this area is armored. The northern section between the pier and Paloma is subject to frequent wave overtopping and damage to homes has occurred. Beaches are narrow and ephemeral, with armoring impeding lateral access from the degraded vertical access ways. South of the pier, the beach tends to be more persistent and wider, and there is usually an accessible beach in the vicinity of the end of Clarendon, with reliable vertical and lateral beach access. South of Clarendon to Mori Point, the beach persists although wave run-up can reach the levee and there is some armoring. This sub-area is exposed to flooding due to rainfall runoff which cannot flow directly to the ocean. The Clarendon area is exposed to flooding now, and certain parts of the West Fairway development may be exposed to flooding if sea-level and ground water levels rise over 3 feet. Due to the potential lead time of establishing a sand source, beach nourishment planning should begin immediately. Coarse sand and/or gravel sources are also preferable and would be more cost effective than finer sands due to sediment transport regimes in this sub-area. By constructing sand retention structures along north Pacifica, the efficacy of beach nourishments can be increased.

Flood protection is already needed for homes and businesses along Clarendon Avenue during rain events and will need to be improved around the SPGC to manage flooding of Laguna Salada regardless of the condition of the SPGC berm. The City of San Francisco is expected to maintain the SPGC berm which protects the Sharp Park neighborhood from the coastal flooding source, but existing pumping facilities in SPGC are not designed to mitigate flooding in and around the course during significant rainfall events (i.e., a portable pump station is currently used to manage rainfall-runoff flooding along Clarendon Avenue). The priority recommendations for flood protection surrounding SPGC are therefore based on the rainfall (fluvial) flood source, but would also be effective during a major coastal storm if the SPGC berm is overtopped or breached. Flooding due to wave run-up landward of Beach Boulevard seawalls is already an issue. Monitoring of the existing seawalls against the higher sea-levels will be necessary (Hazard Policy 5). Results of the monitoring will be considered during the Shoreline Adaptation Plan Update to determine if additional flood protection adaptation measures are necessary.

Hazard Policy 24 (Sharp Park Golf Course).

Encourage the City of San Francisco to maintain the Sharp Park Golf Course berm and armoring, consistent with coastal development permit 2-17-0702; support adaptation planning for the course, and protect public access.

Hazard Policy 25 (Shoreline Structures: 0 feet SLR).

Maintain and expand shoreline protective structures to protect existing public infrastructure structures if consistent with Policies 57 and 58. Extend the Beach Boulevard seawall to the Sharp Park Golf Course berm if consistent with Policies 57 and 58.

Hazard Policy 26 (Structure Elevation: 0-2 feet SLR).

Upgrade existing shoreline structures if consistent with Policies 57 and 58 to limit wave overtopping unless beach nourishment strategies are effective in reducing wave run-up on the backshore. Elevate development structures if consistent with Policies 57 and 58 as necessary to mitigate flood damage, consistent with existing height limitations.

Hazard Policy 27 (Beach Nourishment: 0-1 feet SLR).

Pursue beach nourishment and sand retention structures to reduce shoreline protection maintenance requirements and provide beach resources. Encourage the City of San Francisco to nourish the beach fronting the Sharp Park Golf Course berm to maintain beach widths.

Hazard Policy 28 (Flood Protection: 0 foot SLR).

Evaluate and construct appropriate flood protection measures, which may include a Clarendon Avenue stormwater basin, pump station, and/or interior SPGC levee, to protect homes and businesses from existing fluvial storm flood hazard zone.

Hazard Policy 29 (Flood Protection: 3 feet SLR).

Evaluate the future need to construct a West Fairway Park stormwater basin, pump station, and interior SPGC levee to protect western homes from future coastal/fluvial flood hazard zone.

Rockaway Beach, Quarry and Headlands

The armoring near the end of Rockaway Blvd is overtopped by waves under present conditions, with occasional damages. Hence, this area has very little capacity and will have a noticeably degraded condition with as little as one foot of sea-level rise. There is no beach in this area, with waves crashing directly into the armor structures. The shore becomes more accessible with distance northward but will also be more limited with as little as 1 foot of sea-level rise. The south end of rockaway is unarmored, has a persistent beach and the backshore is estimated to be impacted with about 2 feet of sea-level rise.

Due to the cove configuration of Rockaway Beach, it is a great candidate for beach nourishment. Policies recommend that Rockaway be used as a pilot project for beach nourishment in Pacifica. In the pilot project, the City will go through the overall process for beach nourishment and identify available sources in the region and corresponding sediment characteristics and costs, evaluate the performance of the nourishment and enable the City to reevaluate nourishment along northern Pacifica and perform a more thorough assessment for a larger scale nourishment project.

Hazard Policy 30 (Shoreline Structures: 0 feet SLR).

Existing public shoreline structures along the north cove shall be upgraded for public safety and hazard reduction.

Hazard Policy 31 (Shoreline Protection: 2-3 feet SLR, or when backshore is 100 feet of Highway 1).

Coordinate with Caltrans to evaluate the need for a revetment or other appropriate shoreline protection for the Highway 1 embankment.

Hazard Policy 32 (Public Access: 0 feet SLR).

Plan and provide for enhanced public access, consistent with the City's Shoreline Mitigation Program (-Hazard Policy 7).

Hazard Policy 33 (Beach Nourishment/Public Access: 0 feet SLR).

Plan and implement beach nourishment for Rockaway Beach. Monitor and measure performance and any reduction of shoreline protective structure maintenance needs. Establish mechanisms through the City's Shoreline Mitigation Program (Hazard Policy 7) to receive and use beach impact mitigation monies from other sub-areas of the City.

Hazard Policy 34 (Development Setbacks: ongoing).

Implement new development shoreline setbacks consistent with Hazard Policy 5.

Hazard Policy 35 (Transfer of Development: ongoing).

Evaluate and implement as feasible a transfer of development credit program for private property at the Headlands as supported by Hazard Policy 9.

Pacifica State Beach & West Linda Mar

Adaptation policies for Pacifica State Beach and West Linda Mar are presented together because actions taken at Pacifica State Beach influence coastal hazard exposure to West Linda Mar. Much of the Pacifica State Beach sub-area has a persistent, relatively wide beach with bulkheads in the south transitioning to dune fields in the north. Hence, this shore and roadway can likely withstand at least 2 feet of sea-level rise. However, the West Linda Mar sub-area east of Highway 1 has a low elevation and is subject to flooding from high creek flows and rising groundwater associated with sea-level rise. Due to the existing beach widths at Pacifica State Beach and existing coastal armoring, armoring actions are not a near term priority. However, conditions of existing armoring at the Anza pump station should be monitored to ensure protection in the near term. Nourishment of Pacifica State Beach should be initiated using the shoreline-backshore offset for the main parking lot. Beach nourishment projects should include dune restoration to maintain ecology, protect the sewer force main that is buried in existing dune field north of the main parking lot/Anza pump station as well as provide flooding protection of Highway 1 and West Linda Mar. Pump stations at Pacifica State Beach are vulnerable to wave run-up and require floodproofing in place. West Linda Mar neighborhood is also vulnerable to flooding from San Pedro Creek based on existing FEMA hazard maps and will become more vulnerable as SLR increases the flood levels in the creek via its ocean boundary condition. The West Linda Mar neighborhood was constructed in a former lagoon and experiences groundwater issues in the lowest areas, which is evident by existing wetlands around the skate park and homes furthest west. Groundwater in low areas near the ocean are directly influenced by the sea-level, and thus groundwater issues will increase with SLR.

Hazard Policy 36 (Shoreline Protection: 2 ft SLR or 100 foot offset from shoreline to infrastructure).

Evaluate beach conditions and consider future shoreline protection to protect existing parking structures and the existing Linda Mar pump station structure as necessary.

Hazard Policy 37 (Highway One Protection).

Coordinate with Caltrans to evaluate options for protecting Highway 1, if necessary.

Hazard Policy 38 (Beach Nourishment: 2 ft SLR or 100 foot offset from shoreline to infrastructure).

Evaluate beach conditions and implement beach nourishment as necessary to maintain 100-foot buffer seaward of the sewer force main and/or Highway 1. Repeat nourishments as needed.

Hazard Policy 39 (Flood Protection: 0 feet SLR).

Analyze need for floodwall along commercial property to manage flooding from San Pedro Creek under existing conditions with SLR allowance. Future flood studies that include climate-driven changes in precipitation should inform any floodwall design. Floodproof Anza pump station (stormwater) to mitigate existing coastal storm flooding vulnerabilities to wave run-up.

Hazard Policy 40 (Flood Protection: 2 feet SLR or 100-foot offset from shoreline to infrastructure).

Floodproof the Linda Mar pump stations (sewer and stormwater) to mitigate future coastal storm flooding vulnerabilities to wave run-up as necessary.

Hazard Policy 41 (Groundwater Management: 0-2 feet SLR).

Begin groundwater monitoring to determine needs for dewatering wells in the lowest portions of the West Linda Mar neighborhood.

Pedro Point and Shelter Cove

Potential bluff erosion may reach the most seaward bluff top homes at Pedro Point by about 2050 with 1 to 2 feet of sea-level rise. Private property is mostly armored along the water (boat docks/homes) but require upgrades by property owners, while bluff top properties have limited ability to prevent bluff toe erosion due to parcel limits. Private property is vulnerable to bluff erosion, but implementing bluff toe armoring would be complicated due to land ownership

Hazard Policy 42 (Shoreline Structure Upgrades).

Allow replacement and upgrades of existing shoreline protective structures to reduce hazards and resource impacts if consistent with Policies 57 and 58. Mitigate impacts consistent with the City's Shoreline Mitigation Program (Hazard Policy 7) ~~or~~ and Policy 60 as necessary.

Hazard Policy 43 (Flood Protection: 0-1 feet SLR).

Allow private property owners to raise homes and other development structures above wave run-up hazard if consistent with Policies 57 and 58, consistent with height limitations.

Standard Policies for New Shoreline Development

Hazard Policy 44 (Technical Reports).

New Development proposed in coastal hazard zones ~~on the shoreline~~ shall include coastal engineering, geomorphology and other relevant technical reports unless on-site hazards already identified in a ~~recent~~ hazard map or assessment approved within the last five years are adequate for evaluating and ensuring compliance with the LCP, including through use of permit conditions to address any uncertainty. Reports shall be prepared by a licensed civil engineer or other suitably qualified professional; use the best available science; consider the impacts from the high projection of sea-level rise for the anticipated duration of the proposed development; demonstrate that the development will avoid (or if unavoidable minimize and mitigate) impacts from coastal hazards to the maximum feasible extent; and evaluate the foreseeable effects that the development will have on coastal resources over time. Reports may be waived for temporary events, temporary development structures or other minor, short-term development where it is clear there will be no significant hazard risks over the project's life.

Hazard Policy 1 (Land Divisions).

Land divisions that create new development potential in coastal hazard zones, including lot splits, lot line adjustments and conditional certificates of compliance, are prohibited, unless the new or reconfigured parcels: (1) include buildable area that can be developed consistent with LCP hazards policies, or the shoreline, bluff face, and blufftop area land is restricted permanently as non-developable (other than possibly for public recreational access or open space), and (2) the land is restricted to prohibit shoreline protective devices located on such parcels and/or to protect development on such parcels.

Hazard Policy 45 (Siting and Design).

New development ~~on vacant shoreline property~~ in coastal hazard zones shall be sited and designed to be safe from erosion, bluff failure, wave runup, flooding and other coastal hazards for at least 100 years without ~~new~~ shoreline protection, considering projected sea-level rise and other climate change effects. Permit approvals shall prohibit shoreline protective structures ~~on~~ for the authorized development, require the property owner to record an acknowledgement that the development does not qualify as an existing ~~development~~ structure entitled to shoreline protective structures~~on~~ under Coastal Act Section 30235, and a waiver of any rights to such protective structures~~on~~, and where necessary require a removal and restoration plan, including bonding for large projects, to avoid future shoreline protective strucures~~on~~ or project failure.

Hazard Policy 46 (Assumption of Risk by Private Landowners).

Permit approvals of development in coastal hazard zones ~~on the shoreline~~ shall require the applicant to record a deed restriction acknowledging and agreeing: 1) that the development is located in a hazardous area, or an area that may become hazardous in the future; 2) to assume the risks of injury and damage from such hazards in connection with the permitted development; 3) to unconditionally waive any claim of damage or liability against the City of Pacifica, its officers, agents, and employees for injury or damage from such hazards; 4) to indemnify and hold harmless the City of Pacifica, its officers, agents, and employees with respect to approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; 5) that sea-level rise could render it difficult or impossible to provide services to the site (e.g., maintenance of roadways, utilities, sewage or water systems), thereby constraining allowed uses of the site or rendering it uninhabitable; 6) that the boundary between public tidelands and private land may move inland causing the structure to be located on public

Comment [A6]: Recommend using this language from the City's first memo.

Comment [A7]: Define.

Comment [A8]: Recommend adding back in this language from the City's first memo.

Comment [A9]: Recommend using this language from the City's first memo.

Comment [A10]: Recommend using this language from the City's first memo.

land and thus subject to removal unless otherwise authorized by the Coastal Commission and State Lands Commission; and 7) that the structure may need to -be removed or relocated if it becomes unsafe or substantially damaged.~~requiring the owner to indemnify and hold the City harmless and make other acknowledgments relating to the risks relating to the property.~~

Comment [A11]: Recommend adding back in this language from the City's first memo.

Hazard Policy 47 (MHTL and Avoidance of Public Trust Lands).

Applications for low-lying development adjacent to coastal waters shall include a Mean High Tide Line (MHTL) survey of the development site prepared by a licensed professional land surveyor based on field data collected within 12 months of the application submittal~~.~~. The survey shall be conducted in consultation with and approved by the California State Lands Commission (CSLC) staff. Development shall be sited to avoid public trust lands for the approved duration, unless otherwise authorized by the California State Lands Commission and Coastal Commission. New MHTL surveys shall be submitted every ten years or within one year of a new tidal datum epoch, seismic event in the project area greater than 5.5, or significant relative rise in annual local mean sea-level records.

Hazard Policy 48 (Bluff Face Development).

Shoreline protective structures, grading, and landform alteration on bluff faces are prohibited, except for the following: public access structures where no feasible alternative means of public access exists, and shoreline protective devices if otherwise allowed by the LCP and the public access and recreation policies of the Coastal Act. Such shoreline structures shall be designed and constructed to be visually compatible with the surrounding area to the maximum extent feasible, ~~and~~ to minimize effects on erosion of the bluff face, and to avoid (and where unavoidable to minimize and to mitigate) coastal resource impacts to the maximum extent feasible.

Hazard Policy 49 (Minor Development in Shoreline Areas).

Minor and/or ancillary development, including public trails, benches, gazebos, patios, etc., may be located seaward of a bluff or shoreline setback line provided that development is otherwise consistent with the LCP, does not create a hazard, ~~and~~ does not use a foundation that can serve as a bluff retaining device, such as caissons, or that requires landform alteration, and that the development is removed or relocated by the landowner when threatened or in the event that portions of the development fall to the bluffs, beach or ocean.

Hazard Policy 50 (Non-conforming Structures in Hazardous ~~Shoreline~~ Areas).

Comment [A12]: Recommend using this language from the City's first memo.

When the expansion or redevelopment of ~~an~~ existing development ~~structure~~ that is legally non-conforming with an LCP standard, including bluff setbacks or other hazard criteria, is proposed, the entire structure ~~new construction~~ shall be made to conform with the LCP and, if applicable, the Coastal Act. The degree of non-conformity shall not be increased.

Comment [A13]: Recommend using this language from the City's first memo.

Hazard Policy 51 (Protection of Private Property in Hazardous Areas).

Where full adherence with all LCP policies, including for setbacks and other hazard avoidance measures, would preclude a reasonable economic use of the property as a whole, the City may allow the minimum economic use and/or development of the property necessary to avoid an unconstitutional taking of private property without just compensation. There is no taking that needs to be avoided if the proposed development constitutes a nuisance or is otherwise prohibited pursuant to other background principles of property law (e.g., public trust doctrine). Continuation of preexisting use (e.g., continued use of an existing development structure, including with any permissible repair and maintenance, which may be exempt from permitting requirements) may provide a reasonable economic use. If development is allowed pursuant to this policy, it must be consistent with all LCP policies to the maximum extent feasible.

Hazard Policy 52 (Habitat Sea-level Rise Migration Buffers).

A sea-level rise buffer area shall be added to require~~d~~ new development habitat buffers if necessary to allow for the migration of wetlands and other ~~shoreline~~ coastal habitats caused by sea-level rise over the anticipated duration of the development. Except for temporary uses, as described below, uses and development within sea-level rise buffer areas shall be limited to minor passive recreational uses, with fencing, de-siltation or erosion control facilities, or other improvements deemed necessary to protect the habitat, to be located in the upper (upland) half of the buffer area. Water quality features such as drainage swales required to support new development shall not be constructed in wetland buffers. Temporary uses may also be placed in the sea-level rise buffer area until such time as sea-level rise causes the wetlands or other ~~shoreline~~ coastal habitat to migrate to within 100 feet of the temporary uses, at which time, they shall be removed. All ~~permanent~~ habitat and buffers identified shall be permanently conserved or protected through a deed restriction, open space easement or other suitable device.

Hazard Policy 53 (Stormwater and Dry Weather Flows).

New development shall provide adequate drainage and erosion control facilities that convey site drainage in a non-erosive manner to minimize hazards resulting from increased runoff and erosion. Runoff shall be directed inland to the storm drain system or to an existing outfall, when feasible. If no storm drain system or existing outfall is present, blufftop runoff shall not be channelized or directed over bluffs and/or to the beach or the ocean.

Hazard Policy 54 (Reduction of Greenhouse Gases).

New development shall include solar panels and, as appropriate, other energy reducing techniques to minimize greenhouse gas emissions, consistent with community character, coastal views and protection of biological resources.

Standard Policies for Shoreline Structures

Hazard Policy 55 (Soft Shoreline Protection).

Encourage the use of soft or natural shoreline protection methods, such as dune restoration and beach/sand nourishment as alternatives to hard shoreline protective devices. Soft shoreline protection devices shall be fully evaluated for coastal resource impacts, and shall only be approved if found consistent with the LCP and Coastal Act policies related to shoreline protection. Consider combining beach replenishment with groin construction to maintain beaches and protect development (see subarea policies).

Hazard Policy 56 (Beach Nourishment).

In coordination with the Coastal Commission and other permitting agencies (e.g., State Lands Commission, U.S. Army Corps of Engineers), the City shall ~~develop and implement~~evaluate a beach nourishment program in conjunction with sand retention structures to assist in maintaining beach width and elevations, consistent with subarea policies. The beach nourishment program will include measures to protect water quality and to avoid (and where unavoidable to minimize and mitigate) potential adverse coastal resource impacts, including biological resource impacts, from deposition of material, including measures such as sand compatibility specifications, restrictions on volume of deposition, timing or seasonal restrictions, and identification of environmentally preferred locations for deposits. The City will also consider developing an opportunistic sand program and evaluate how replenishment options may need to change over time with sea-level rise.

Hazard Policy 57 (Existing Shoreline Structures).

Except as may be otherwise provided in the LUP subarea policies, legally permitted shoreline protectivecon structures may be repaired and maintained subject to all coastal permit requirements (including those associated with the construction of the structure and/or prior repair and maintenance episodes) until the development they are protecting is removed or redeveloped or no longer requires shoreline protective structures, at which time the shoreline protective structurecon shall be reevaluated for consistency with the LCP. Repair and maintenance activities shall not result in any enlargement or extension of the shoreline protective structure, or any seaward encroachment or impairment of public trust resources, and shall provide mitigation for any new coastal resource impacts not previously or otherwise mitigated, including through the City's Shoreline Mitigation Program (Hazard Policy 7) and/or Policy 60 . Expansion, augmentation or replacement of 50 percent or more of the shoreline structure (by volume, linear (height or length) or areal extent) constitutes a new shoreline structure and shall comply with all policies of the LCP.

Hazard Policy 58 (New Shoreline Structures).

Unless a waiver of rights to shoreline protection applies on the property, shoreline Shoreline protection structures, including revetments, breakwaters, groins, seawalls, cliff retaining walls, deep piers and caissons, and other such construction that alters natural shoreline processes shall be permitted consistent with the LUP's sub-area policies only when required to serve coastal-dependent uses or protect existing principal development structures or public beaches in danger from erosion, when designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and when there is no less environmentally damaging feasible alternative such as relocation of threatened development, beach nourishment, non-structural drainage and native landscape improvements, or other similar non-structural options, and when coastal resource impacts are avoided (and where unavoidable minimized and mitigated) to the maximum extent feasible. A waiver of rights to shoreline protection would be an agreement executed between the property owner and the California Coastal Commission.

Comment [A14]: Recommend using this language from the City's first memo.

Hazard Policy 59 (Authorization Limits of New Shoreline Structures, 30235; Coastal Act).

Unless otherwise directed in a subarea policy, shoreline protection structures shall only be authorized until the time when the existing principal development structure or adjacent development structures that are protected by such a device: 1) is no longer present, or 2) no longer requires armoring, or 3) is redeveloped.

Hazard Policy 60 (Mitigating Impacts of New Shoreline Structures).

Necessary shoreline protective structures shall be sited and designed to avoid sensitive resources to the maximum extent feasible. Adverse coastal resource impacts shall be avoided, and where unavoidable shall be minimized and fully mitigated, including impacts on sand supply, beach area, public access (vertical access to the shore and horizontal access along the shore and blufftop) and recreational use (surfing, fishing, hiking, etc.), public trust lands and values, ecological function, water quality, shoreline aesthetics, and cultural resources. Mitigation options shall include consideration of providing equivalent new public access, recreation, habitat or other coastal resource in the vicinity of the project, or if such options are not feasible, proportional in-lieu fees that consider and reflect, to the maximum extent practicable, the full value of impacted and/or lost resources for the approved lifetime authorization period of the project. Any fees shall be deposited in an interest-bearing account held by the City of Pacifica for use within the city limits for mitigation of the specific impact identified in the project approval. This policy may be met through compliance with the City's Shoreline Mitigation Program (Hazard Policy 7)

Hazard Policy 61 (Monitoring Plan for New Shoreline Structures).

Proposals for new, ~~replacement~~ redeveloped/augmented or repaired shoreline protection structures shall include a monitoring plan that evaluates the condition of the shoreline structure, conditions at the site and surrounding area, and whether the shoreline protection structure is still needed for protection. The plan shall require an inspection at least every five years to identify: any structural damage and need for repair; environmental impacts, including excessive scour, impacts to shoreline processes and beach width (at the project site and the broader area and/or littoral cell as feasible), and impacts to public access and the availability of public trust lands for public use; and the status of the ~~development~~ existing structure being protected. The monitoring plan shall also be updated to at a minimum include any specific requirements associated with coastal permit approval. At least every 15 years the landowner shall submit a new Mean High Tide Line (MHTL) survey of the Subject property based on field data collected within 12 months of the date submitted. Surveys shall comply with Hazard Policy 47.

Standard Policies for Coastal Flooding and other Hazards

Hazard Policy 62 (Flooding).

New development in flood hazard zones shall be avoided. If relocation of existing development in hazard zones is infeasible, substantial improvements shall be sited and designed to be safe from flooding, and without adverse offsite effects, for at least 100 years, considering projected sea-level rise and future flooding, including at least the 1% probability event. Design requirements shall include raising finished floor elevations of habitable space above projected flood elevations; storing hazardous materials out flood areas; elevating mechanical and utility installations; prohibiting basements; and using flood vents and anchoring structures where appropriate. Structure elevations shall be limited to ensure consistency with LCP visual and community character policies and assure access to utilities over the duration of the development.~~comply with the City's Flood Damage Prevention Ordinance.~~

Comment [A15]: Recommend using this language from the City's first memo.

Hazard Policy 2 (Repetitive Loss).

The City shall monitor repetitive flooding loss and FEMA claims to assist in identification of priorities for adaptation measures, including acquisition of high-risk properties.

Comment [A16]: Recommend using this language from the City's first memo.

Hazard Policy 63 (Flood Risk Reduction).

The City shall evaluate and pursue floodproofing of infrastructure and other development in danger from projected flooding by 2050. Allow and facilitate if feasible private owners to floodproof development structures, consistent with other LCP policies.

Hazard Policy 64 (Steep Slopes and Landslides).

Unless no other buildable area exists on the parcel, development shall be prohibited on slopes in excess of 35 percent ~~and on bluff faces~~, except for drainage improvements and necessary shoreline protection structures.

Comment [A17]: Captured in Hazard Policy 48.

Hazard Policy 65 (Seismic Hazards).

New development shall be sited and designed to minimize risks from seismic events. Buildings for human occupancy shall avoid surface traces of active faults, consistent with the Alquist-Priolo Act and other relevant state law.

Hazard Policy 66 (Tsunami Hazards).

New development shall consider and minimize risks from in identified tsunami run-up zones. Measures may include signage and education, evacuation plans, warning systems and other mitigations of tsunami risks.

Hazard Policy 67 (Bluff Drainage and Erosion).

The City will evaluate and research feasible new funding mechanisms to investigate areas that may be significantly contributing to groundwater flows to the bluffs and determine whether improving drainage and/or reducing irrigation could reduce bluff erosion. Measures to improve drainage and reduce over-watering shall be communicated to the public and property owners as part of existing water conservation outreach programs, and included as conditions on new development where applicable.

~~Glossary~~Definitions

Existing Structure: For purposes of considering shoreline protective devices, "existing structure" shall mean a structure that was legally authorized prior to the effective date of the Coastal Act on January 1, 1977.

Coastal Hazard Zone. "Coastal Hazard zones" shall mean the areas shown on the City's prepared maps based on the best available science about projected sea-level rise, erosion, flooding, and other coastal hazards.

~~**New Development.** "New Development" shall mean the act or process of creating a structure or use where no existing structures or use occurs.~~

Redevelopment: An existing structure located in an area potentially subject to hazards shall be considered redeveloped (and deemed new development under this LCP that must be made to conform with all applicable LCP policies), when such development consists of: (1) alteration (including interior and/or exterior remodeling and renovations, demolition or partial demolition, etc.) of 50% or more of major structural components (including exterior walls, floor and roof structure, and foundation) considered individually (i.e., percentages are calculated by the individual structural component being altered, and are not additive between different structural components); (2) additions and alterations to such development that lead to a 50% or more increase in floor area for the development; and/or (3) additions and alterations to such development that costs 50% or more of the market value of the existing structure before construction. Changes to floor area and individual major structural components and the costs of such changes are measured cumulatively over time starting from January 1, 1977.

Shoreline. "Shoreline" shall mean property in which a bluff edge or beach traverses the property either partially or wholly.

Comment [A18]: See comment regarding hazard maps in our letter.

Comment [A19]: Define "redevelopment" instead.

Comment [A20]: See comment regarding the definition of shoreline in our letter.

REFERENCES

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Environmental Science Associates (ESA), 2017. Future Conditions Scenarios for Pacifica LCP Update, Memorandum. Prepared for the City of Pacifica, December 18, 2017.

Environmental Science Associates (ESA), 2018a. Sea-Level Rise Vulnerability Assessment. Prepared for the City of Pacifica January 2018, Revised June 2018.

Environmental Science Associates (ESA) 2018b. Final Draft Sea-level Rise Adaptation Plan. Prepared for the City of Pacifica. July 2018.

O'Connor, Bonny

From: amy [redacted] >
Sent: Tuesday, September 11, 2018 11:01 AM
To: Sea Level Rise
Subject: shouldn't this also include the city of pacifica?

1 Hazard Policy 21 (New Shoreline Structures). Unless a waiver of rights to shoreline protection applies on the property, shoreline protection structures, including revetments, breakwaters, groins, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted consistent with the LUP's sub-area policies when required to serve coastal-dependent uses or protect existing principal development structures or public beaches in danger from erosion, when designed to Sea-Level Rise Policy Options for Pacifica LCP Update 15 OAK #4835-6155-5312 v7 eliminate or mitigate adverse impacts on local shoreline sand supply, and when there is no less environmentally damaging feasible alternative such as beach nourishment, non-structural drainage and native landscape improvements, or other similar non-structural options. A waiver of rights to shoreline protection would be an agreement executed between the property owner and the California Coastal Commission (and the city of Pacifica??)

O'Connor, Bonny

From: amy gmail <[redacted]>
Sent: Tuesday, September 11, 2018 8:33 AM
To: Sea Level Rise
Subject: What property tax increases are anticipated for homeowners to pay for the sea level rise plan?

1 What property tax and special assessment increases are anticipated for homeowners to pay for the sea level rise plan?
Thanks,
Amy Caplan
Manor Drive

O'Connor, Bonny

From: amy <[redacted]
Sent: Sunday, September 16, 2018 12:11 PM
To: Sea Level Rise
Subject: Please publish this link to NOAA with all future sea level rise documents and show at all future meetings.

1 It's obvious the stakeholders in Pacifica do not have a grasp on the regional predicament the entire Bay Area faces due to sea level rise. I hope the city and ESA will advise all stakeholders to review the NOAA viewer for Pacifica and then for the entire Bay Area (from the Delta to San Jose).
Pacifica will get off easy and the rest of the Bay Area will be under much more serious threat.
https://coast.noaa.gov/slr

amy caplan
pacifica

O'Connor, Bonny

From: Dan Peknik [redacted] >
Sent: Friday, September 21, 2018 2:02 PM
To: Sea Level Rise
Cc: Esther Leong
Subject: Draft policy comments

1 1) Hazard Policy 6 and 7 should be changed to reflect more accurate and fair timeframes that do not give the council complete authority to change policies at any time. In the past, decades were the norm. Now it's "up to" every 3 and/or 5 years. There is no way that sea level rise requires that level of granularity. Even the hazard map states the year 2100 as the basis for it's analysis. 3-5 years is neither necessary nor realistic.

2) There needs to be a system of checks and balances in the policies whereby voters make the ultimate decision on what gets amended, not the council.

2 3) Hazard policy 46 is illegal and will cost more money when the city is sued. Get rid of it. There is no way you'll indemnify the town and denying permits based on this policy will result in law suits the likes of which will cost more than the policy saves.

3 4) Neighborhoods like Fairway Park West, which are not effected by sea level rise in the scope of this document, should have a statement made in their policies that they are "exempt" from the policy regulations or be removed from the document altogether. Why have policies for neighborhoods that are, by definition, not in effected zones.

4 5) The Hazard policies say that the city WILL implement the LCP adaption plan, which INCLUDES managed retreat. That nullifies the sentence saying that Managed Retreat is not a part of the document. Language referring to implementing the LCP should be removed.

5 6) A policy should be put in place that requires peer review of ESA's documentation before being used to make or be the basis of any hazard policy.

6 7) There needs to be a policy stating that no policies may go into effect until the public has had at least 60 days to review them.

Dan Nicholas, Seaside Drive, Fairway Park West

O'Connor, Bonny

From: Leon Slick [redacted] >
Sent: Friday, September 21, 2018 10:51 AM
To: Sea Level Rise
Subject: Rejection of Managed Retreat

As for me and my house we do not support Managed Retreat. All references and language that mention Managed Retreat must be purged from all LCP Policies. The LCP Policies are based on a false document. At the end of the "Policy Meeting" the truth about this document was reveled. I am sure that all of the city representatives, that were present, were not happy with ESA when they finally openly admitting that the "MAP" document is flawed. The berm was not taken into account with the creation of this map. "The Map" was drawn and pictures a scenario that does not take into account the berm which **Does Exist**. It is for this very reason that the citizens of Pacifica demand that ESA be removed from this project and that all documentation provided by ESA be examined for clarity and truth. All issues relating to the hazard map must be removed and/or reviewed by an independent engineering/science agency including but not limited to the hazard map which depicts flooding that might occur in the year **2100** *IF* there was **5.7ft(!) of sea-level rise**, *AND* a **100-year storm (what ever that is)**, *AND* **removal of all sea-level rise protections like the berm and the pump house**. (Why would any rational person even think of that). 1

Conclusion: It is imperative that a neutral investigation is needed to pull together the **facts**, create a record so that the citizens of Pacifica can draw on the information that they receive to develop and create a **proper** Local Coastal Plan. More time is required to filter through all of the materials pertaining to Managed Retreat.

Thank you for reading this letter.

O'Connor, Bonny

From: Jeff Guillet [redacted]>
Sent: Sunday, September 30, 2018 12:32 PM
To: Sea Level Rise; [redacted]; Foster.Patrick@Coastal.ca.gov; CoastalLCPGrantProgram@coatsal.ca.gov; cgroom@smcgov.org; dhorsley@smcgov.org
Cc: O'Neill, Mike; Keener, John; Digre, Sue; Martin, Deirdre; Vaterlaus, Sue; marc.hershman@sen.ca.gov; marc.hershman@sen.ca.gov; Mario.Rendon@asm.ca.gov; Brian.Perkins@mail.house.gov; [redacted]; Nathan.Daniel@Coastal.ca.gov; Carl.Dan@coastal.ca.gov; Ainsworth.John@Coastal.ca.gov; Rexing.Stephanie@Coastal.ca.gov; Cavalieri.Madeline@Coastal.ca.gov; Ducklow.Kelsey@Coastal.ca.gov; [redacted]; Wehrmeister, Tina; O'Connor, Bonny
Subject: RE: Comments on Pacifica Draft LCP Policies

1 Fixed #10, below.

– Jeff Guillet

From: Jeff Guillet <>
Sent: Sunday, September 30, 2018 10:32 AM
To: 'sealevelrise@ci.pacifica.ca.us' <sealevelrise@ci.pacifica.ca.us>; [redacted] 'Foster.Patrick@Coastal.ca.gov' <Foster.Patrick@Coastal.ca.gov>; 'CoastalLCPGrantProgram@coatsal.ca.gov' <CoastalLCPGrantProgram@coatsal.ca.gov>; 'cgroom@smcgov.org' <cgroom@smcgov.org>; 'dhorsley@smcgov.org' <dhorsley@smcgov.org>
Cc: 'o'neillm@ci.pacifica.ca.us' <o'neillm@ci.pacifica.ca.us>; 'keenerj@ci.pacifica.ca.us' <keenerj@ci.pacifica.ca.us>; 'digres@ci.pacifica.ca.us' <digres@ci.pacifica.ca.us>; 'martind@ci.pacifica.ca.us' <martind@ci.pacifica.ca.us>; 'vaterlauss@ci.pacifica.ca.us' <vaterlauss@ci.pacifica.ca.us>; 'marc.hershman@sen.ca.gov' <marc.hershman@sen.ca.gov>; 'marc.hershman@sen.ca.gov' <marc.hershman@sen.ca.gov>; 'Mario.Rendon@asm.ca.gov' <Mario.Rendon@asm.ca.gov>; 'Brian.Perkins@mail.house.gov' <Brian.Perkins@mail.house.gov>; s[redacted]com; 'Nathan.Daniel@Coastal.ca.gov' <Nathan.Daniel@Coastal.ca.gov>; 'Carl.Dan@coastal.ca.gov' <Carl.Dan@coastal.ca.gov>; 'Ainsworth.John@Coastal.ca.gov' <Ainsworth.John@Coastal.ca.gov>; 'Rexing.Stephanie@Coastal.ca.gov' <Rexing.Stephanie@Coastal.ca.gov>; 'Cavalieri.Madeline@Coastal.ca.gov' <Cavalieri.Madeline@Coastal.ca.gov>; 'Ducklow.Kelsey@Coastal.ca.gov' <Ducklow.Kelsey@Coastal.ca.gov>; [redacted] 'wehrmeistert@ci.pacifica.ca.us' <wehrmeistert@ci.pacifica.ca.us>; 'o'connorb@ci.pacifica.ca.us' <o'connorb@ci.pacifica.ca.us>
Subject: Comments on Pacifica Draft LCP Policies

Attached are my comments to the "Final" Draft LCP Policies.

2
1. It is unfair for the city to request the public's final comments to a draft that is incomplete. The coastal commission staff will make "substantial" comments to the current SLR adaption plan at very last minute, before public comments close. When can we expect California Coastal Commission comments to be released to public? The public demands an equal amount of time to review and comment on those changes.

3
2. The "data" that ESA produced (mostly developed by themselves) has not been peer reviewed. The public demands time and funds to perform a peer review using the grant money that the city was given to produce the data for the report.

3. How much of the LCP grant funds remain - if any? Let the public use them for an impartial peer review.

4. The Draft LCP Policies say, "*Managed retreat is not included in any of the near-term policies. Managed retreat would be reconsidered in the mid- to long-term if feasibility and monitoring warranted, as detailed in Hazard Policy 5 and Hazard Policy 6.*" However, General Hazard Policy 4 (Shoreline Adaptation Plan) says, "*The City shall implement its Sea-level Rise Adaptation Plan (Appendix xx) as expressed in the LUP's general and sub-area coastal hazard adaptation policies*." This is bait-and-switch – nothing more. The Sea-Level Rise Adaptation Plan mentions managed retreat 95 times. This language must be struck from the Sea-Level Rise Adaptation Plan, as well as any reference documentation.

5. Hazard Policy 26 mentions, "*Elevate development structures as necessary to mitigate flood damage, consistent with existing height limitations*." Putting houses on stilts ***IS*** managed retreat!

6. Hazard Policy 46, which indemnifies the city and holds it harmless, is illegal and will be fought with many lawsuits. Remove it from the LCP Policies, otherwise ESA will need to include these litigation costs in the cost benefit analysis.

7. Why is the city requesting an RFP for a hotel in the old waste water treatment site, which is ground zero for all the bad data that ESA has developed? Which is it? Is this a hazard area, as indicated in the reports, or a place to develop a resort?

8. At the Sept. 15th LCP Policy Meeting, ESA said they were going to adjust the cost benefit analysis (after it was already final). Where is that? Has it been formally requested? Based on what objective data? Hiring Surfrider Foundation is NOT a neutral party. Southern California data is not applicable for this area and there is no peer review.

9. The map of Fairway Park West that was continually referenced in the Sept. 15th LCP Policy Meeting is a "guess" at what they would look like in the year 2100 with 5.7ft sea-level rise during a 100 year storm and with all SLR protections removed. That is an unreasonable series of events, especially since the CCC has directed the city and county of San Francisco to maintain the levee. Why is the city using such outlandish predictions for a document that is designed to last 20-30 years? Why does this need to be approved Dec 10?? Why the rush?

10. The term "new development" is entirely too vague and could be taken to mean ANY construction to a property, such as adding an edition, replacing a roof, adding solar panels, etc.

11. The term "shoreline" is too vague. The city needs to have a detailed map available to the public that shows these areas.

12. The document repeatedly references bluffs. Where are these? The city needs to have a detailed map easily available to the public that shows these areas.

13. All references to "city maps", "hazard zones" and all other external references must have public links to their sources. This document is intentionally vague and confusing. It sends the public and city staff on wild goose chases trying to find the source data.

14. Areas and neighborhoods like Fairway Park West, which are not affected by sea-level rise in the scope of this document, must have a statement made in their policies that they are "exempt" from the policy regulations or be removed from the document entirely. Why have policies for neighborhoods that are, by definition, not in affected zones?

15. There needs to be a policy stating that no policies may go into effect until the public has had at least 60 days to review them.

16. Who or what organization will be responsible for future monitoring and reporting. Sounds like ESA, who wrote these policies, is writing themselves into a sweetheart deal in perpetuity. This is a conflict of interest. At what cost to the city? Where are these funds coming from? 17

17. Why is this plan subject to review at least every 5 years? This is a very short time period and is designed to keep a steady stream of revenue for ESA and the Surfrider Foundation, both of which are biased and cannot be trusted – hence the need for peer review and public comment. 18

18. The LCP Policies document that was presented to the public is version 7. Was John Keener or anyone on the city council involved in writing versions 1-7? 19

– Jeff Guillet
www.nopacificaretreat.com

Comment Form

City of Pacifica Sea Level Rise
Public Meeting
Saturday, September 15, 2018

Name: Amy Guillet

Organization: Resident

Email Address: [redacted]

- What comments or questions do you have about the drafted policies?

1 Too fast
Too much lack of research

- Do you foresee any issues with the drafted policies? Please explain.

2 Yes - Your taking $$ 30% property value

[over]

Comment Form

City of Pacifica Sea Level Rise
Public Meeting
Saturday, September 15, 2018

Name: Ken Talsky

Organization: Resident

Email Address: [redacted]

- What comments or questions do you have about the drafted policies?

1 Why Are you in such A hurry to pass this

- Do you foresee any issues with the drafted policies? Please explain.

2 Many Property prices

[over]

O'Connor, Bonny

From: Jeff Guillet [redacted]
Sent: Friday, October 05, 2018 2:45 PM
To: Sea Level Rise
Cc: dhorsley@smcgov.org; b*o'connorb@ci.pacifica.ca.usb
Subject: CCC comments

1 Where are the comments and updates to the LCP policies and plans from the California Coastal Commission? Public comments close on 10/8/2018 and the public has not had a chance to review or comment on these substantive changes. This is unacceptable!

Jeff Guillet

O'Connor, Bonny

From: Jack Kerns <[redacted]>
Sent: Friday, October 05, 2018 2:39 PM
To: Sea Level Rise
Subject: Comment on Final Draft, Sea-Level Rise Adaptation Plan, Pacifica, CA Sept 2018

Dear Ms. O'Connor,

Thank you for the opportunity to comment on the Final Draft, Sea-Level Rise Adaptation Plan for Pacifica, dated September 2018 ("Plan").

I would like to point out that in the section "Valuing Recreational Resources," p. 68, there is no discussion of surfing. Non market valuation is now being used to describe the socioeconomic value of surfing. See https://www.researchgate.net/publication/233704645_The_Value_of_Recreational_Surfing_to_Society. See also "Surfonomics: What's the Value of a Wave? https://nicholasinstitute.duke.edu/articles/surfonomics-whats-value-wave.

1 In addition, it has been recognized there is a need to consider any negative impacts on surf breaks. See "The Value of Recreational Surfing to Society."

Needless to say, the Plan fails to discuss the negative impact of armoring and sea walls on surfing at Pacifica State Beach. Furthermore, Pacifica State Beach is visited by large numbers of surfers, especially on the weekend, many of whom do not necessarily live in Pacifica, several surf schools now give lessons, and it would not be hard to imagine a significant socioeconomic value of surfing based on non market valuation.

I would recommend that the Plan be revised to incorporate non market valuation of surfing and the discussion of negative impacts to surfing of seawalls and armoring at Pacifica State Beach. In addition, has the City of Pacifica considered what king of mitigation for negative impacts to surfing should be required if armoring is allowed rather than managed retreat at Pacifica State Beach?

Thank you.

Jack Kerns,
[redacted] Forest Park Drive
Pacifica, CA

O'Connor, Bonny

From: Gil Anda <[redacted]
Sent: Sunday, October 07, 2018 9:47 PM
To: Sea Level Rise
Cc: Gina Zari
Subject: Comments for Draft LCP
Attachments: IMG_1448.JPG; IMG_1449.JPG; IMG_1455.JPG

1 I would suggest that sea walls should follow the design of the Michael O'Shaughnessy Sea Wall along San Francisco's Great Highway. It has withstood the test of time (100+ years) and seems to preserve the beach as well. When it was originally designed it included concrete bleachers at the foot of the sea wall. It's wave like design seems to deflect sand back onto the beach as the concrete bleachers have long since been covered in sand and the beach extends a quarter mile away from the sea wall. This design could, if it performs similarly to San Francisco's Sea Wall, save the cost of replenishing the beaches.

2 Managed retreat is an option that could be onerous to property owners. I would suggest that the rate of sea level increase should be watched at regular time intervals, such as every five to ten years. Currently that rate is 3.2 millimeters (or 0.13 inches) per year. At that rate, the sea level will have increased 1.3 inches in ten years. If the sea level goes up 6 inches to 1 foot, or more during that time, then it would be more reasonable to necessitate managed retreat. If that increase is not met, you can always continue to monitor the sea level rise without taking such drastic measures.

Thanks,

Gil Anda

O'Connor, Bonny

From: O'Connor, Bonny
Sent: Monday, October 08, 2018 8:02 AM
To: Sea Level Rise
Subject: FW: Policy document comments

From: Stan Zeavin [redacted]
Sent: Saturday, October 06, 2018 7:24 PM
To: O'Connor, Bonny
Subject: Policy document comments

Hi Bonny,

As usual, thanks for your terrific work! Here are my comments and questions.

1

The policy document is thorough and reasonable.

Hazard Policies 4-15 are very important. My concerns are as follows.

2

HP5 - How will Pacifica establish thresholds for reassessing shoreline change?
HP 7 - How will Pacifica decide which shoreline/resource impacts need to be mitigated?
HP 15 – "…ensure proactive coordinated and streamlined adaptation efforts and response to future coastal hazards." We need specifics about how to accomplish this as soon as possible!

Page 6 - "Managed retreat is not included in any of the near-term policies. Managed retreat would be reconsidered in mid- to long-term if **feasibility** and **monitoring** warranted, as detailed in Hazard Policy 5 and Hazard Policy 6."

3

• How is feasibility defined? Does this mean economic? Does it mean physical? Does it mean political?

• By what process will we review and re-evaluate?

3 (Cont.) • What process will be initiated for monitoring? Who will be responsible for design and oversight of monitoring?

4 Having removed managed retreat from immediate consideration, the policy document needs strong guidance on determining detailed methods of reassessing and monitoring changes in the environment. The importance of monitoring and review must be emphasized.

5 Please clarify language and define terms in HP58-61. Please also clarify when new shoreline structures are “necessary.”

6 In general, I'd hope to see more emphasis on conserving beaches and wetlands. These public trust lands are our natural capital. We must also consider how we can build capacity in the city to preserve these lands and also accomplish managed retreat in the future in a less painful, incremental fashion.

My sincere thanks and appreciation to all the people involved in developing this important and complex set of documents.

Margaret Goodale

O'Connor, Bonny

From: caroline izoco[redacted]
Sent: Monday, October 08, 2018 9:33 PM
To: Sea Level Rise
Subject: LCP concerns

1 My name is Caroline Chiramberro and I live at [redacted] Greenway Drive. My main concern with the plan is that my neighborhood is even included on the plan! It is farther back from the sea than the others and would not be affected at all by 2100. Please consider excluding my neighborhood from these current plans. I'm fear that the value of my home and neighborhood could be affected now when the sea level is not expected to reach our homes for at least 100 years! If not more!

Respectfully,
Caroline Chiramberro

Sent from Yahoo Mail on Android

O'Connor, Bonny

From: chaya gordon <[redacted]
Sent: Monday, October 08, 2018 4:59 PM
To: Sea Level Rise
Cc: chay gordo
Subject: Comments on LCP Draft Policies

1

Sea level rise due to global warming is well underway, and there is no way to stop it. The latest scientific evidence is that sea level rise is increasing faster than predicted. Pacifica's coastline is extremely vulnerable.

Pacifica has 12% of its structures and infrastructure in the coastal zone. Much if not all of the infrastructure is connected to the 88% of the city's sewers, power and water that is not in the coastal zone. Armoring the coast to protect structures and infrastructure is a temporary measure, but a short-term one. Armoring will fail—sooner rather than later, and when it does, the destruction to city-wide infrastructure is likely unless our infrastructure is moved or otherwise protected. This is the unfortunate reality we must face now, to plan the best we can for the future.

In order to have the widest range of planning options available to the city, I support including managed retreat as a potential near-term and long-range-term strategy in the Local Coastal Plan Policies. Money may be available now but not in the future. Depending on protective strategies selected, the cost will be many millions of dollars.

We need to show courage now to protect Pacifica's future.

Chaya Gordon
Rockaway

O'Connor, Bonny

From: FA Ribera [redacted] >
Sent: Monday, October 08, 2018 1:15 PM
To: Sea Level Rise
Subject: Fairmont West

I know that this is not as important as all the other important things going on at this time.

I have a house in Fairmont West.
I have been to a few of these public workshops, that have been talking about all these adaptation plans.

1 I have also heard some one has said that there is only one road (Palmetto) to get in and out of Fairmont West. This is not true. I have used the back way many times to get in and out of Fairmont West. I take Hickey Blvd, Gateway Dr., Skyline, and Crenshaw Dr.. This takes me to the top of Palmetto where all the houses are.

I just wanted to let you know there is another way to get in and out of Fairmot West.

Thank you
F. Ribera

O'Connor, Bonny

From: O'Connor, Bonny
Sent: Monday, October 08, 2018 4:54 PM
To: Sea Level Rise
Subject: FW: Policy document comments

From: Stan Zeavin [redacted]
Sent: Monday, October 08, 2018 4:54 PM
To: O'Connor, Bonny
Subject: Policy document comments

SEA LEVEL RISE (SLR) POLICY COMMENTS AND QUESTIONS

1 The whole process by the City of Pacifica and ESA leading up to and including the Proposed Updated Land Use Plan Coastal Hazards Policies has been handled in a very professional manner. This process and its results were both well thought out and allowed ample opportunity for comments and questions from our citizens. The results mirror the concerns of the State of California through the guidelines of the California Coastal Commission CCC), while attempting to balance the needs of a diverse group of citizens.

1. Hazard policy #8 (Adaptation Funding) states in part: "….securing FEMA and other federal or state adaptation or hazard mitigation funds, to finance adaptation strategies."

2 **Question: Does this statement include finding funds for planning future infrastructure issues such as sewer realignment? If not, is there a statement in the policy that addresses this issue?**

If not, I would like to see a statement in the policy that would allow for this type of advanced planning rather than see it eventually arise as another emergency measure.

2. There are many references in the hazard policies about funding armoring, beach nourishment, groins, etc. Just the engineering cost of Adaptation 1 is around $190,000,000. I see no reference as to how the public might be kept informed as to what the city has secured or what the cost is to our taxpayers.

3 **Question: Does the city have a plan to keep the public informed as to the ongoing costs to the taxpayers of protecting the coastline? If so, what is it? If not, why not?**

3. While I would prefer that no new structures be build in any hazard zone, state law, at this time, seems to protect the right of individuals and groups to build them. Although I would like the city to be protected from any liability resulting from any new property built in a hazard zone, there doesn't seem to be a law that would stop an owner(s) from walking away, leaving the city to pay for a final clean-up/removal of any structure left behind. 4

Question: If a new structure in a hazard zone follows the guidelines outlined in hazard policies #44 and #46, does the city have any recourse to protect itself from the future liability costs if the owners(s) choose to walk away?

4. Hazard policy #7 talks about "….Special emphasis shall be placed on maintaining beaches….". Hazard policy #55 encourages "….the use of soft or natural shoreline protection methods, such as dune restoration….". Laguna Salada (Sharp Park Beach) has great potential for natural dune restoration, without the city having to spend a penny. A further benefit is its wetlands would absorb much of any storms wrath. We all know San Francisco has the CCC's blessing to keep the berm functional for the next nine years, even though we will have lost 12 acres of beach by 2020. However, SF has its own problems with SLR including major costs. I see no Pacifica plan for Sharp Park in the policy statement if SF steps away. 5

Question: Does Pacifica have a plan for the Sharp Park Golf Course if SF steps away? If so, why isn't it in the policy? If not, why not?

I would also like our city to inform SF that we would prefer to keep one of the few beaches that might survive for at least another century rather than a golf course that has yet to show how it benefits Pacifica. 6

Thank you for the good job you've done.

Stan Zeavin
Linda Mar