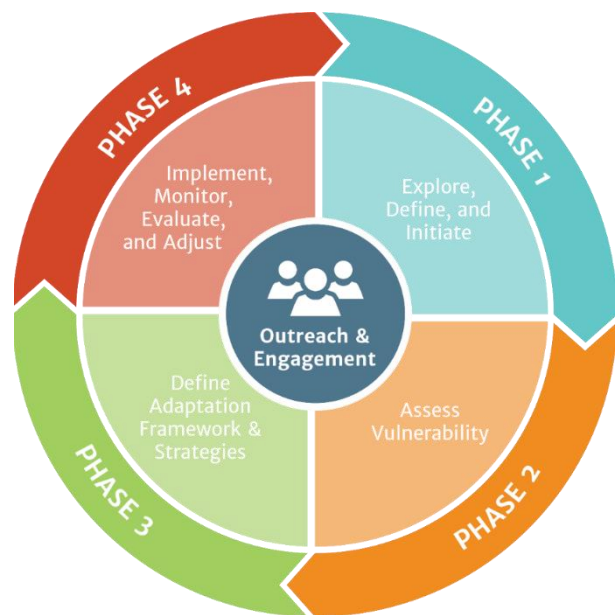


Sea-level Rise Model Policies for Local Coastal Programs in the SCAG Region

Overview

All coastal communities in the SCAG region are expected to be confronted with increasing rates of storm-related flooding and erosion associated with sea-level rise. By mid-century, coastal flooding could become a daily occurrence. This document is intended to be used as a resource for coastal communities that seek to incorporate policies in their local coastal programs (LCP) to mitigate their risks to sea-level rise. Descriptions of other guidance documents prepared by state agencies is also provided. A number of coastal communities throughout California have begun to address their exposure to sea-level rise hazards with the preparation of vulnerability assessments and adaptation plans. Many of these communities have also prepared sea-level rise related policies for incorporation into their LCPs. A few have successfully received approvals of their LCP amendments by the California Coastal Commission while others are still working through the local approval process or under review by the California Coastal Commission. Many of these communities and the status of their planning process are identified below. A suite of model policies is also provided that address sea-level rise for communities in the SCAG region to consider refining and incorporating into their LCPs.

This document is prepared as part of the Southern California Regional Climate Adaptation Framework, a project led by SCAG that involves the preparation of a step-by-step guide on how to assess climate risk and develop strategies to reduce those risks, along with a suite of tools to assist cities and counties in the climate adaptation process. Policy development is part of Phase 4, Step 4.1 of the Southern California Climate Adaptation Guide, which is available at this [link](#).



Southern California Adaptation Planning Guide's Four Phases of Adaptation Planning

Summary of Relevant Documents

The California Coastal Commission has prepared multiple guidance documents to assist jurisdictions in updating their LCPs and addressing sea-level rise.

California Coastal Commission Sea-Level Rise Policy Guidance

The purpose of the California Coastal Commission's Sea-Level Rise Policy Guidance is to aid jurisdictions in incorporating sea-level rise into LCPs, coastal development permits, and regional strategies. The document outlines specific issues that policymakers and developers may face as a result of sea-level rise, such as preparing for extreme events, challenges to public access, vulnerability and environmental justice issues, and consistency with the California Coastal Act. The Guidance organizes current science, technical, and other information and practices into a single resource to facilitate implementation of the Coastal Act by coastal managers at the state and local level. It also lays out the recommended planning steps to incorporate sea-level rise into planning strategies to reduce vulnerabilities and guide adaptation planning. A large selection of sea-level rise adaptation strategies is included in the document, with a strong emphasis on using soft or green (i.e., nature-based) adaptation strategies. It was updated in 2018 to reflect updated best available science consistent with following reports released by the Ocean Protection Council: *Rising Seas in California: An Update on Sea-Level Rise Science and State of California Sea-Level Rise Guidance: 2018 Update*.

California Coastal Commission Residential Adaptation Policy Guidance (Draft)

The intent of the Residential Adaptation Policy Guidance is to assist local governments in planning for sea-level rise adaptation, specifically related to coastal residential development. The document is meant as a companion document to the California Coastal Commission's Sea Level Rise Policy Guidance, detailed above. It provides an in-depth discussion of sea-level rise adaptation strategies specifically related to residential development, and provides model policies that jurisdictions should consider. Residential development is the foundation of many of California's coastal communities. However, as sea-levels rise and beaches and bluffs migrate inland, maintaining residential development causes the narrowing and eventual loss of beaches, dunes, and other shoreline habitats.

California Coastal Commission Local Coastal Program Update Guide

The LCP Update Guide provides guidance to jurisdictions for updating their LCPs. Certified LCPs have become an important part of California's coastal zone management program. However, due to changes in the amount, condition, and location of development and sensitive resources over time, the California Coastal Commission and local governments have recognized that LCPs need to be updated over time to remain effective. The document supports LCP update efforts by providing information and guidance for addressing emerging issues, including sea-level rise. It consists of Part 1, which is relevant to an update of the Land Use Plan component of the LCP, and Part 2, which covers the procedures that local governments use to implement LCP policies. Part 1 provides guidance on a range of coastal resources, including but not limited to public access, water quality protection, scenic and visual resources, and coastal hazards. Part 1 Section 9, *Shoreline Erosion & Protective Devices*, adopted in 2013, originally provided guidelines related to shoreline erosion, shoreline protective structures, and sea-level rise adaptation strategies. However, the California Coastal Commission subsequently adopted the Sea-Level Rise Policy Guidance document, detailed above, which overrides Part 1 Section 9 as the most up-to-date document reflecting science-focused methodology related to sea-level rise.

Local Coastal Programs that Address Sea-level Rise

A description of example LCPs throughout the state that have either been certified or are still in the process of being certified are described below. The examples listed are not meant to provide an exhaustive list of cities and counties addressing sea-level rise.

Selection of Certified Local Coastal Programs that Address Sea-level Rise

City of San Clemente Local Coastal Program Land Use Plan (2018):

The California Coastal Commission certified the City of San Clemente's comprehensive Land Use Plan update on August 10, 2018. The Land Use Plan carries over General Plan policies related to the coastal zone, and expands upon goals and policies for coastal planning and implementation. The Land Use Plan includes several high-level and broad sea-level rise policies, including sea-level rise monitoring, preparation of a sea-level rise vulnerability study and a shoreline management plan, and ongoing coordination with neighboring jurisdictions. The Land Use Plan also includes policies for site development to avoid the need for future shoreline or bluff protective devices and to avoid and minimize risks from geologic, coastal, and fire hazards as exacerbated by sea-level rise. The document is available at: <https://www.san-clemente.org/departments-services/planning-services/long-range-planning/local-coastal-program>

City of Santa Barbara Local Coastal Program Coastal Land Use Plan (2019):

In August 2019, the California Coastal Commission certified Santa Barbara's updated Coastal Land Use Plan. The updated Coastal Land Use Plan modernizes the 1981 Coastal Land Use Plan, builds upon the City's 2011 General Plan, and implements standards that clarify the coastal development review process and align with the California Coastal Act. The Coastal Hazards and Adaptation chapter addresses sea-level rise. It divides the coastal zone into different shoreline hazard screening areas, ranging from low-lying beach areas to coastal bluff-stops to inland coastal flooding areas. The Land Use Plan includes several detailed policies and development standards related to each of these different hazard screening areas. The document is available at: <https://www.santabarbaraca.gov/services/planning/mpe/lcp/clup/default.asp>

Ocean Beach, San Francisco's Western Shoreline Area Plan (2018):

San Francisco's LCP Amendment was approved by the California Coastal Commission in May 2018. The LCP Amendment is an update to the 1986 Western Shoreline Area Plan that now specifically addresses sea-level rise and coastal erosion concerns, based on recommendations from the Ocean Beach Master Plan. The Coastal Hazards portion includes six broad policies addressing the implementation of the Sea-Level Rise Adaptation Plan and Beach Nourishment Program, limiting shoreline protection devices, and minimizing impacts of shoreline protection devices. Notably, the LCP also includes a policy related to implementing managed retreat adaptation measures, including removing shoreline protection devices as the shoreline retreats, relocating public beach parking and public restrooms to areas that will not be affected by erosion or sea-level rise, closing and rerouting a portion of the Great Highway, and

importing sand, among other policies. The document is available at:

https://generalplan.sfplanning.org/Western_Shoreline.htm

Selection of Draft Local Coastal Programs that Address Sea-level Rise

City of Hermosa Beach PLAN Hermosa:

The City of Hermosa Beach is currently in the process of updating its 1981 LCP. The City recently adopted an updated General Plan in August 2017, titled PLAN Hermosa, which includes high level and broad sea-level rise policies in the Public Safety Element. Once certified, the LCP will be integrated into the PLAN Hermosa document. The General Plan document is available at:

<https://www.hermosabeach.gov/our-government/community-development/plan-hermosa>

City of Santa Monica LCP Land Use Plan:

The Santa Monica City Council adopted the Land Use Plan in October 2018, and is seeking certification by the California Coastal Commission. The Land Use Plan consists of seven policy areas, including sea-level rise and coastal hazard policies. The sea-level rise policies are organized into three timeline phases, including policies which apply immediately upon adoption and will continue to apply through all phases, policies that will apply when the “mid-term sea-level rise” scenario occurs, and policies that will apply in the “long-term sea-level rise” scenario. The document is available at:

<https://www.smgov.net/Departments/PCD/Plans/Local-Coastal-Plan-2018-Update/>

City of Pacifica LCP:

The City of Pacifica is currently working on its draft LCP update. The LCP will be incorporated into the Plan Pacifica document, which includes the efforts to update both the City’s General Plan and Land Use Plan. The City developed draft recommendations for LCP policies related specifically to sea-level rise in late 2018. There is a mix of general policies and policies that apply to specific neighborhood areas. Policies address mid- and longer-term measures, subject to feasibility and monitoring concerns. These draft LCP policies are available at: https://www.cityofpacific.org/depts/planning/sea_level_rise.asp

Marin County LCP:

The Marin County LCP Land Use Plan and Implementation Plan was adopted by the Board of Supervisors in 2015 and the California Coastal Commission approved the document in 2016 with modifications, with the exception of environmental hazards. The environmental hazards portion of the document, including related to sea-level rise, is still undergoing modifications and coordination between Marin County and the California Coastal Commission. The modified Environmental Hazards Chapter (Attachment 4) includes multiple policies related to flooding hazards, including floor elevation requirements that take into account sea-level rise. Draft and modified versions of the LCP are available at:

<https://www.marincounty.org/depts/cd/divisions/planning/local-coastal-program/plans-and-docs?panelnum=12>

Carlsbad LCP Update:

The City of Carlsbad released a Draft LCP update in late 2019 which include sea-level rise policies. Public hearings with the Planning Commission and City Council are scheduled for early 2020. Within the Coastal Hazards chapter, broad policies address sea-level rise hazards analysis, siting new development and redevelopment, shoreline protective devices, moving development away from hazards, and preparation of an adaptation plan. The draft version of the LCP is available at: <https://carlsbadca.gov/news/displaynews.asp?NewsID=1984&TargetID=65>

Sea-level Rise Model Policies

This section identifies sea-level rise policies for many, but not all, of the policy themes identified in the California Coastal Commission's Draft Residential Adaptation Guidelines. Although the California Coastal Commission's guidance document was intended to apply to residential land uses, the policies and policy themes included below are applicable to other coastal land uses. These model policies are derived from draft and certified LCPs prepared by a variety of cities and counties located throughout California. Coastal communities should consult California Coastal Commission guidance for model policy language developed by the California Coastal Commission. Note that the policies presented reflect minor revisions made to remove cross-referencing and nuances specific to each community. The model policies in this document are meant to be used as a starting point and should be refined to suite the unique context of each local community. Table 1 provides a list of the policy themes that can be directly accessed by clicking on each theme.

Table 1 Policy Themes

Policy Theme
Identifying and Using Best Available Science
Identifying Planning Horizons
Mapping Coastal Hazards
Site Specific Coastal Hazard Report Required
Coastal Hazard Report Contents
Assumption of Risk
Siting to Protect Coastal Resources and Minimize Hazards
Removal Plan Conditions for New Development in Hazardous Areas
Bluff Face Development
Nonconforming Structures in Areas Subject to Coastal Hazards
Restrict Land Division in Hazardous Areas
Takings Analysis
Removal Conditions/Development Duration
Mean High Tide Line (MHTL) Survey Conditions
Habitat Buffers
Avoid Adverse Impacts from Stormwater and Dry Weather Discharges
Flood Hazard Mitigation
Shoreline and Bluff Protective Devices
Prioritization of Types of Shoreline Protection

Policy Theme
Soft Shoreline Protection
Siting and Design to Avoid and to Mitigate Impacts
Repair and Maintenance of Shoreline Protective Devices
Shoreline Armoring Duration
Shoreline Armoring Monitoring and Mean High Tide Line Surveys
Emergency Permits
Management of Sea-level Rise Hazards
Adaptation Plan
Adaptation Plan for Highly Vulnerable Areas
Sea-level Rise Hazard Overlay Zone
Beach Nourishment
Improve Drainage on Bluffs to Reduce Erosion
Repetitive Loss
Beach Management Plan
Transfer of Development Rights Program
Geologic Hazard Abatement Districts (GHADs)
Aligning Local Coastal Programs with Local Hazard Mitigation Plans

Identifying and Using Best Available Science

- **Sea-Level Rise and Best Available Science.** Planning and development reviews in the community 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. (Pacifica Draft LCP 2018)
- **Sea-level Rise Information.** The best available scientific information regarding sea-level rise projections and effects shall be considered in the preparation of findings and recommendations for all geologic, geotechnical, hydrologic, coastal hazards, and engineering investigations. Current best available scientific information shall be reflective of the most current California Coastal Commission guidance, and peer reviewed studies that are widely accepted within the scientific community and locally relevant. Support scientific studies that increase and refine the body of knowledge regarding potential sea-level rise in the community, and possible response to it. (San Clemente Land Use Plan 2018)

Identifying Planning Horizons

- **Expected Life of a Development Defined.** The expected life of a development is the time period for which a development is expected to function without major repairs. The expected life of residential and commercial structures shall be a minimum of 75 years, while other types of development shall be determined on a case-by-case basis. (Santa Barbara Land Use Plan 2019).
- **Sea-level Rise Planning Horizons for Development.** The appropriate time horizon to use to evaluate the potential impacts of sea-level rise on development depends on the anticipated

duration/life of the development (i.e., the time when the development is expected to be removed, replaced, or redeveloped). The duration of any development is generally defined by the following timeframes, unless a site-specific or project-specific analysis determines otherwise:

Anticipated Duration of Development	
Development Type	Anticipated Duration
Ancillary development or amenity structures (e.g., trails, bike racks, playgrounds, parking lots, shoreline restrooms)	5 years
Manufactured or mobile homes	30 years
Buildings (e.g., residential, commercial, office, industrial, etc.)	75 years
Critical infrastructure	100 years

Carlsbad Public Review Draft Land Use Plan 2019

Mapping Coastal Hazards

- **Hazard Identification and Mapping.** The community'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 that coastal hazard zone maps, site-specific hazard mapping and assessment may be required as part of the individual development review process. (Pacifica Draft LCP 2018)
- **Update Shoreline Hazard Maps.** The City shall update shoreline hazard maps as necessary to incorporate new sea-level rise science, monitoring results, and information on coastal conditions. (Santa Barbara Land Use Plan 2019)

Site Specific Coastal Hazard Report Required

- **Site-Specific Coastal Hazard and Erosion Study.** A site-specific coastal hazard and erosion study is required for all new shoreline and coastal bluff development that could be threatened by coastal hazards such as inundation, flooding, wave run-up and overtopping, erosion, etc. including an analysis of the changes to these hazards due to sea-level rise within the anticipated life assuming no reliance upon existing or future shoreline protective devices. This study shall be prepared by a qualified professional, and shall use the best available science, and a scenario-based analysis to assess the potential coastal impacts (inundation, flooding, wave run-up and overtopping, erosion, etc.), taking into consideration the effects of sea-level rise over the lifetime of the development (minimum of 75 years unless otherwise specified) considering, at a minimum, a high sea-level rise scenario. If the new development cannot fully minimize hazards

risks by avoiding all geologic and coastal hazards for the anticipated life of the development without reliance upon existing or future shoreline protection, the study should discuss possible adaptation responses to the hazards to reduce risk as feasible and mitigate impacts to coastal resources. The study should also include an evaluation to determine whether any grading (permitted or unpermitted) has occurred and whether the grading, if any, has had an effect on potential inundation hazard. (San Clemente LCP 2018).

- **Site-Specific Sea-level Rise Hazard Report.** Require a site-specific sea-level rise hazard report(s) for all development that requires a coastal development permit and is proposed on property that is 1) wholly or partially in a sea-level rise hazard zone (as shown on the sea-level rise hazard maps for the year 2100), or 2) an oceanfront parcel outside the boundary of a sea-level rise hazard zone. The report shall be prepared pursuant to the requirements specified in the zoning ordinance and shall:
 - A. Be based on the best available sea-level rise science and state guidance applicable at the time of the report.
 - B. Demonstrate that the development will avoid or minimize impacts from sea-level rise hazards (inundation, bluff erosion, flood) for the anticipated duration of the development.
 - C. For sites with existing shoreline protective devices, the analysis shall assume that the protective device does not exist, such that the site would erode in a manner similar to an unarmored site in the same vicinity with similar geologic attributes.
 - D. Demonstrate that the development will not encroach on public trust lands or a wetland boundary or required buffer during the anticipated duration of the development.
(Carlsbad Public Review Draft Land Use Plan 2019)
- **Technical Reports.** 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. (Pacifica Draft LCP Policies 2018).

Coastal Hazard Report Contents

- **Potential Shoreline Hazards Screening Area 1 (City-Owned Low-lying Beach and Backshore Areas) Evaluations for New Development and Substantial Redevelopment.** The Potential

Shoreline Hazards Screening Area 1 (City-Owned Low-Lying Beach and Backshore Areas) is potentially subject to beach erosion, coastal flooding, and wave impacts. Shoreline Hazard Evaluations for development in this screening area shall be prepared and signed by a qualified California licensed professional (e.g., Professional Geologist, Engineering Geologist, Geotechnical Engineer, Civil Engineer, Soils Engineer, and/or Coastal Engineer, as applicable). The evaluations shall be subject to review and approval by the City's Environmental Analyst. The Environmental Analyst may require peer review of evaluations by a technical specialist in order to deem them adequate. The City may impose a fee on applicants to recover the cost of review of evaluations. Evaluations shall analyze the effects of the hazard and the development over the expected life of the project, factoring in the effects of sea-level rise, and with and without the effects of any existing or new shoreline protective devices except for existing major public shoreline protection and flood protection devices (breakwater and other protection devices for the Harbor, Laguna Channel Tide Gate and Pump Station Facility, etc.). The evaluation may assume that existing authorized levels of dredging, sand management, and beach nourishment continue to occur. The following shall be evaluated:

- A. The profile of the beach;
- B. Mean high tide line, including a mean high tide line survey (unless data shows the mean high tide line will not be affected by the project);
- C. The area of the project site subject to beach erosion, coastal flooding, and wave impact hazards;
- D. The FEMA Base Flood Elevation and mapped areas;
- E. Future projections in sea-level rise, associated beach erosion, coastal flooding, and wave impacts, and any additional sea-level rise related impacts that could be expected to occur over the life of the project in both storm (100-year storm) and non-storm scenarios. The analysis shall utilize best available science and include, at a minimum, evaluation of projected sea-level rise at a high emission scenario based on state guidance;
- F. Design requirements to assure stability and structural integrity;
- G. The need for a shoreline protection device over the life of the project;
- H. The long-term impacts of proposed development on sand supply;
- I. The impacts of the proposed development during construction and operation on beach erosion, coastal flooding, wave impacts, and any other hazards on or near the site;
- J. The impacts of proposed development on public access to and along the shoreline;

- K. Any necessary mitigation measures, alternatives, or monitoring protocols to be completed over the life of the development and that are needed to avoid or minimize any potential beach erosion, coastal flooding, wave impacts hazards, and any potential impacts to public access to and along the shoreline; and
- L. A statement verifying whether the development will minimize risks to life and property; assure stability and structural integrity; and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area over its expected life, factoring in the effects of sea-level rise. (Santa Barbara Land Use Plan 2019). *(NOTE TO READER – Santa Barbara applies this policy to their low-lying beach and backshore areas on properties owned by the City. The City has similar policies with different report requirements that apply to other hazard areas, such as their bluffs.)*

Assumption of Risk

- **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 community harmless and make other acknowledgements related to the risks relating to the property. (Pacifica Draft LCP Policies 2018).
- **Conditions of Approval.** For any areas located within coastal hazard zones or in hazardous areas as demonstrated by a site-specific hazard study, the City shall include the following conditions of approval:
 - Implementation of mitigation measures for any unavoidable coastal resource impacts as identified in the site-specific hazard study, including any necessary monitoring requirements.
 - The applicant shall exempt the City from liability for any personal or property damage caused by geologic or other hazards on such properties and shall record a deed restriction acknowledging on behalf of themselves and successors and assigns, the risks to the property associated with sea-level rise, including: risks demonstrated in a site specific analysis; unless a protective device is allowed , a waiver of any rights that may exist under applicable law to construct a bluff or shoreline protective device(s) at any point in the future to protect the development approved pursuant to the applicable CDP; and that public funds may not be available or allowed to be allocated to remedy damage to public roadways, infrastructure, and other facilities resulting from natural events such as sea-level rise.

- A condition by which the applicant agrees, with a deed restriction, to remove the authorized development and restore the area to its natural condition if any of the following occur:
 - Any government agency has ordered that the development is not to be occupied due to imminent threat to occupants' health and safety; and/or
 - The City has determined that services to the site can no longer be maintained (e.g., utilities, roads); and/or
 - The development is no longer located on private property due to the migration of the public trust boundary. (Santa Monica Draft Land Use Plan 2018)

Siting to Protect Coastal Resources and Minimize Hazards

- **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. (Pacifica Draft LCP Policies 2018).
- **Sea-level Rise and Development.** Consistent with the policies herein, site development to avoid the need for future shoreline or bluff protective devices and to avoid and minimize risks from geologic, coastal, and fire hazards as exacerbated by sea-level rise over the life of the proposed development. Design development to account for projected sea-level rise using the best available science. Assess projects for their vulnerability to impacts from coastal hazards and sea-level rise and, if vulnerable, require an adaptation strategy for new development and major remodels that does not rely on shoreline or bluff protective devices. Analyze options for removal or relocation of structures that become threatened by coastal hazards. (San Clemente LCP 2018)

Removal Plan Conditions for New Development in Hazardous Areas

- **Example 1: Permit Condition Requiring Future Removal.** Permit development and redevelopment that cannot be located and designed to avoid impacts from sea-level rise hazards, only if the development meets all the following criteria:

- A. The proposed development is the least environmentally damaging feasible alternative and is sited and designed to protect coastal resources and minimize hazards to the extent feasible.
 - B. Approval of the development includes a condition that requires removal or other adaptation measures when specific triggers are met to ensure that the development does not: 1) impact coastal resources, 2) substantially impair public trust resources, 3) become structurally unstable, or 4) pose unacceptable risks to life or property. The condition shall be recorded as part of a notice of restriction.
 - C. The proposed development is consistent with the public access and recreation policies of the Coastal Act and this LCP. (Carlsbad Public Review Draft Land Use Plan 2019)
- **Example 2: Permit Condition Requiring Future Removal.** Except for coastal-dependent development, new development, including Major Remodels, in hazardous areas shall be conditioned to require that the development shall be removed and the affected area restored to its previous or natural condition if: (a) any government agency has ordered that the structures are no longer allowed to be occupied due to coastal hazards, or if any public agency requires the structures to be removed; (b) services to the site can no longer be maintained (e.g., utilities, roads); (c) the development is no longer located on private property due to the migration of the public trust boundary, and the development significantly impairs public trust resources; (d) removal is required pursuant to LCP policies for SLR adaptation planning; or (e) the development requires new and/or augmented bluff or shoreline protective devices and such devices cannot be authorized consistent with the LCP. (San Clemente LCP Land Use Plan 2018)

Bluff Face Development

- **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. (Pacifica Draft LCP Policies 2018)
- **Bluff Face Development.** New permanent structures shall not be permitted on a bluff face, except that public access facilities, including walkways, overlooks, stairways, and/or ramps, may be allowed to be located on the bluff face where no feasible alternative means of public access exists, provided they meet the following criteria:
 - A. Must be designed and constructed to minimize landform alteration of the oceanfront bluff face;

- B. Does not contribute to further erosion or cause, expand, or accelerate instability of the bluff;
- C. Must be visually compatible with the surrounding area;
- D. Avoids the need for bluff or shoreline protection to the extent feasible; and
- E. Must be sited and designed to be easily relocated or removed without significant damage to the bluff or shoreline. (San Clemente LCP Land Use Plan 2018)

Nonconforming Structures in Areas Subject to Coastal Hazards

- **Non-conforming Structures.** Prohibit improvements (including those that do not meet the threshold of redevelopment) to an existing structure which is legally non-conforming due to a sea-level rise hazard policy or standard when the improvements increase the degree of non-conformity by increasing the hazardous condition, such as by developing seaward or in a location that conflicts with the policies of this chapter, or by extending the duration that the non-conforming structure will remain non-conforming. (Carlsbad Public Review Draft Land Use Plan 2019)
- **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 nonconformity shall not be increased. (Pacifica Draft LCP Policies 2018)

Restrict Land Division in Hazardous Areas

- **New Lot Creation.** Prohibit the creation of new lots (including adjusted lots) in sea-level rise hazard zones, unless it is demonstrated either that:
 - A. The new lot(s) will be permanently protected for open space, public access, or other similar purposes consistent with the community's LCP and Coastal Act, or
 - B. Resultant parcels contain a buildable area in which development would remain located on private property despite the migration of the public trust boundary, not require the future construction or augmentation of a shoreline protective device, be adequately served by public services (e.g., water, sewer, and safe, legal, all-weather access as applicable), and otherwise be consistent with all LCP policies and standards.

Lot line adjustments that do not meet the criteria above may be permitted if the adjustment will not exacerbate or create a current or future sea-level rise hazardous condition and will not expose additional developments to a sea-level rise hazard. (Carlsbad Draft Land Use Plan 2019)

- **Subdivision.** Any subdivision of property shall be reviewed for consistency with LCP policies. New parcels that do not have an adequate building site area to comply with the setback standards and other hazard avoidance provisions of these policies shall not be created. (San Clemente LCP Land Use Plan 2018)

Takings Analysis

- **Taking of Private Property.** The City does not have the power to grant or deny a permit in a manner which will cause a physical or regulatory taking of private property, without the payment of just compensation. This policy is not intended to increase or decrease the rights of any owner of property under the Constitution of the State of California or the United States (Coastal Act Section 30010). (San Clemente LCP Land Use Plan 2018)
- **Property Takings.**
 - A. The LCP is not intended, and shall not be construed as authorizing the City acting pursuant to the LCP or the Coastal Act, to exercise its power to grant or deny a permit in a manner which will take or damage private property for public use without the payment of just compensation therefore. The LCP and Coastal Act is not intended to increase or decrease the rights of any owner of property under the Constitution of the State of California or the United States.
 - B. Where full adherence to all LCP policies and standards would preclude a reasonable economic use of a lawfully created property as a whole, the City may allow the minimum economic use and development of the property necessary to avoid an unconstitutional taking of private property without just compensation. An applicant who requests such a takings override must provide, as part of any coastal development permit application, evidence sufficient to support its request and to make the findings required pursuant to subsection C. below. 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, may provide a reasonable economic use. If development is allowed pursuant to this policy, it must be consistent with all policy and standards of the LCP to the maximum extent feasible.
 - C. A Coastal Development Permit that allows a deviation from a policy or standard of the LCP to provide a reasonable economic use of property may be approved or conditionally approved only if the City makes the following findings:
 - i. Based on detailed economic, ownership, and land use information provided by the applicant, as well as any other relevant evidence, each use allowed by the

policies and standards of the LCP would not provide an economically viable use of the applicant's lawfully created property;

- ii. Application of the policies and/or standards of the LCP would unreasonably interfere with the applicant's reasonable investment-backed expectations;
- iii. The use proposed by the applicant is consistent with the community's Zoning Ordinance;
- iv. The use and development design, siting, and size are the minimum necessary to avoid a taking;
- v. The project is the least environmentally damaging feasible alternative and is consistent with all policies and standards of the LCP other than the provisions for which the deviation is requested; and
- vi. The development will not be a public nuisance or violate other background principles of the state's law of property (e.g., public trust doctrine). If it would violate any such background principle of the state's law of property, the development shall be denied.

- D. The community's Zoning Ordinance should be amended to incorporate the findings listed above for coastal development permits that involve takings override (City of Santa Barbara Land Use Plan 2019).

Removal Conditions/Development Duration

- **Moving Development Away from Hazards.** Require removal or relocation of structures or portions of structures and restoration of the impacted property in the following circumstances (note: new and/or augmented shoreline protective devices shall not be permitted to protect the structure(s) unless otherwise permitted by this LCP):
 - A. Any government agency with relevant authority and jurisdiction has ordered that the structures are not to be occupied or are to be removed due to hazards that negatively affect public health and safety.
 - B. Essential services to the site can no longer feasibly be maintained (e.g., utilities, roads).
 - C. The structures are no longer located on private property due to the migration of the public trust boundary, and the development significantly impairs public trust resources.
 - D. The development requires new and/or augmented shoreline protective devices that conflict with the sea-level rise policies in this chapter.

E. Removal is required pursuant to other sea-level rise policies in this chapter.

It is the landowner's responsibility to remove the structure(s) and restore the site at the owner's expense in a way that best protects the public trust and coastal resources. In the event portions of the development fall to the bluffs, beach, or ocean before they are removed/relocated, the landowner will remove all recoverable debris associated with the development and lawfully dispose of the material in an approved disposal site. Removal and restoration activities requires a coastal development permit or an emergency coastal development permit, if warranted. (Carlsbad Public Review Draft Land Use Plan 2019)

Mean High Tide Line (MHTL) Survey Conditions

- **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 California 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. (Pacifica Draft LCP Policies 2018)

Habitat Buffers

- **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. (Pacifica Draft LCP Policies 2018)

Avoid Adverse Impacts from Stormwater and Dry Weather Discharges

- **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. (Pacifica Draft LCP Policies 2018)

Flood Hazard Mitigation

- **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. (Pacifica Draft LCP Policies 2018)
- **Development in Flood Prone Areas.** Development in areas of special flood hazards subject to inundation as shown on the most current flood insurance rate map, and in areas potentially subject to flooding in future large storm events considering the effects of sea-level rise and erosion shall be prohibited unless no alternative building site exists on the legal lot and proper mitigation measures are provided to minimize or eliminate risks to life and property from flood hazard. Additionally, the City shall ensure that any permitted development and fill in the 100-year flood plain will not result in an obstruction to flood control and that such development will not adversely affect coastal resources within the floodplain. (San Clemente LCP Land Use Plan 2018)
- **Development Standards Subject to Coastal Flooding.** New development and substantial redevelopment potentially subject to coastal flooding shall:
 - Avoid high flood hazards unless determined to be infeasible or more damaging to coastal resources;
 - Where avoidance of high flood hazards cannot be achieved, minimize flood risk by increasing elevation of structures, restricting basements or habitable floor area below grade, restricting grading, restricting fencing or yard enclosures that cause water to pond, and/or utilizing flood proof materials consistent with local building requirements; and
 - Be designed to assure stability and structural integrity and neither create nor contribute significantly to downstream flooding, erosion, geologic instability, or destruction of the site or surrounding area over the expected life of the development, factoring in the effects of sea-level rise. (Santa Monica Land Use Plan 2018)

Shoreline and Bluff Protective Devices

- **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 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. (Pacifica Draft LCP Policies 2018)
- **New Shoreline Structures.** Permit shoreline protective devices, pursuant to Coastal Act Section 30235, including revetments, breakwaters, groins, seawalls, bluff retaining walls, and other such construction that alters natural shoreline processes, only when all the following criteria are met:
 - A. The protective device is required to serve coastal-dependent uses or protect public beaches in danger from erosion or protect existing principal structures. "Existing" in the context of this policy refers to structures that existed prior to California Coastal Commission certification of this policy.
 - B. The protective device is designed to eliminate or mitigate adverse impacts on local shoreline sand supply.
 - C. There is no less environmentally damaging alternative.
 - D. No waiver of rights to shoreline protective devices applies to the property.
 - E. The shoreline protective device is required, as a condition of approval, to be removed when the coastal-dependent use or structure, which the device is intended to protect, is no longer present or no longer requires armoring. (Carlsbad Public Review Draft Land Use Plan 2019)
- **Limits on Bluff and Shoreline Protective Devices.** Limit the use of protective devices to the minimum required to protect coastal-dependent uses, or existing structures or public beaches in danger of erosion, unless such devices are otherwise consistent with the public access and recreational policies of the Coastal Act and all relevant policies of the LCP. Protective devices 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. Any approved protective devices shall also be designed to avoid, or mitigate where unavoidable, impacts on public access and recreation, habitat, scenic views, beach width and other coastal resources, and they shall not substantially impair public trust resources. (San Clemente LCP Land Use Plan 2018)

Prioritization of Types of Shoreline Protection

- **Non-structural Shoreline Protection.** Identify and give priority to non-structural shoreline protection options, prior to permitting shoreline protective devices pursuant to. Non-structural shoreline protection options may include, but are not limited to, relocation of the threatened development, beach nourishment, non-structural drainage, and native landscape improvements, sand bags, or other similar non-structural options that can address an erosion hazard and/or minimize risk of flooding and provide structural stability. Such non-structural options shall be used wherever feasible to protect coastal resources. (Carlsbad Public Review Draft Land Use Plan 2019)

Soft Shoreline Protection

- **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, such as revetments or sea walls. 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. (Pacifica Draft LCP Policies 2018)
- **Soft Shoreline Protection.** Encourage the use of soft or natural shoreline protection methods, such as beach/sand nourishment, dune restoration, living shorelines, horizontal levees, and other soft or natural alternatives to hard shoreline protective devices. Prior to approval of a soft shoreline protection method, the community shall consider how the soft shoreline protection method may need to change over time as sea levels rise, and the impacts the shoreline protection may have on coastal resources. (Carlsbad Public Review Draft Land Use Plan 2019)

Siting and Design to Avoid and to Mitigate Impacts

- **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 community 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 community's Shoreline Mitigation Program. (Pacifica Draft LCP Policies 2018)

- **Mitigating Impacts of Shoreline Protective Devices.** Require that new shoreline protective devices, when permitted, are sited and designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and to avoid impacts to other coastal resources and public access to the maximum extent feasible. If such impacts cannot be avoided, they shall be mitigated through options such as providing equivalent new public access or recreational facilities or undertaking restoration of nearby beach habitat. Mitigation of impacts to coastal resources and public coastal access shall ensure equitable public access to and benefits from coastal resources. (Carlsbad Public Review Draft Land Use Plan 2019)
- **Minimize Impacts of Shoreline Protection Devices.** Shoreline protection devices may be necessary to protect existing critical infrastructure or development. These shoreline protection devices shall be designed to minimize their impacts on coastal resources while providing adequate protection for existing critical infrastructure and existing development. All shoreline protection devices shall be designed and constructed to avoid, minimize, and mitigate impacts on shoreline sand supply, environmentally sensitive habitat areas, scenic quality, public recreation, and coastal access. Shoreline protection devices shall be designed to blend visually with the natural shoreline, provide for public recreational access, and include proportional mitigation for unavoidable coastal resource and environmentally sensitive habitat impacts. Coastal permit applications for reconstruction, expansion, or replacement of existing shoreline protection devices shall include a re-assessment of the need for the device, the need for any repair or maintenance of the device, any additional required mitigation for unavoidable impacts to coastal resources and the potential for removal or relocation based on changed conditions. Coastal permits issued for shoreline protection devices shall authorize their use only for the life of the structures they were designed to protect. (San Francisco Western Shoreline Area Plan 2018)

Repair and Maintenance of Shoreline Protective Devices

- **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. 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. (Pacifica Draft LCP Policies 2018)
- **Repair and Maintenance.** Permit repair and maintenance of existing, legally permitted shoreline protective devices only if the activities do not result in an enlargement or extension of armoring. Repair and maintenance activities shall not result in a seaward encroachment of the shoreline protective device or substantially impair public trust resources. Repair and maintenance projects

shall include measures to address and mitigate all coastal resource impacts that the repair and maintenance activities may cause. Replacement of 50 percent or more of a shoreline protective device shall not be considered a repair and maintenance, but instead constitutes a replacement structure subject to provisions applicable to new shoreline protective devices. (Carlsbad Public Review Draft Land Use Plan 2019)

Shoreline Armoring Duration

- **Authorizing Limits of New Shoreline Structures.** 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. (Pacifica Draft LCP Policies 2018)
- **Expiration of Bluff and Shoreline Protection Devices.** Coastal Development Permits which authorize expansion, alteration, and/or repair of existing bluff or shoreline protective devices or new bluff or shoreline protective devices shall, through conditions of approval, limit authorization of such devices to the life of the primary structure requiring protection, which authorization shall expire when the primary structure requiring protection is: 1) incorporated into a Major Remodel or redeveloped, 2) is no longer present, or 3) no longer requires a protective device, whichever occurs first. The property owner shall apply for a coastal development permit to remove the authorized bluff or shoreline protective device within six months of a determination by the City or California Coastal Commission on appeal that the device is no longer authorized to protect the structure it was designed to protect because the structure is no longer present, is redeveloped, or no longer requires protection. The removal of the bluff or shoreline protective devices for which authorization has expired shall be required prior to the commencement of construction of any new development on the site. (San Clemente LCP Land Use Plan 2018)

Shoreline Armoring Monitoring and Mean High Tide Line Surveys

- **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. (Pacifica Draft LCP Policies 2018)

Emergency Permits

- **Emergency Permits.** Issue emergency coastal development permits in the event of an emergency (i.e., a sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property or essential services). Emergency coastal development permits shall only be issued if:
 - A. An emergency exists that requires action more quickly than permitted by the procedures for a regular coastal development permit;
 - B. The work can and will be completed within 30 days unless otherwise specified by the emergency permit;
 - C. The work is consistent with applicable LCP policies;
 - D. The nature of the work is temporary and fully removable with minimal impact to the affected area;
 - E. The work is the minimum amount of temporary development necessary to abate the emergency in the least environmentally damaging short- and long-term manner;

Requests for emergency coastal development permits for any work to be conducted within the California Coastal Commission's permit jurisdiction (tidelands, submerged lands, and public trust lands) shall be referred to the California Coastal Commission. (Carlsbad Public Review Draft Land Use Plan 2019)

- **Emergency Permits Expiration.** Require that all emergency coastal development permits expire six months after the permit becomes effective, unless extended for good cause by the community, and if such extension is limited as much as possible in duration. Within 30 days of issuance of an emergency coastal development permit, the applicant shall apply for a regular coastal development permit. All emergency development is considered temporary and must be removed and the affected area restored within six months after the emergency permit becomes effective, unless the community authorizes an extension of time for good cause or the development is permitted by a regular coastal development permit. (Carlsbad Public Review Draft Land Use Plan 2019)

Management of Sea-level Rise Hazards

- **Sea-level Rise Hazards Analysis.** Incorporate the community's Sea-level Rise Vulnerability Assessment as an appendix of this LCP Land Use Plan. The assessment, including sea-level rise hazard maps, shall be updated approximately every 10 years; the update shall utilize the best available science and state guidance applicable at the time of the update. (Carlsbad Public Review Draft Land Use Plan 2019)
- **Citywide Sea-level Rise Vulnerability Study.** The City shall research and prepare a Citywide Sea-level Rise Vulnerability Study. The results of this study shall be used to inform future LCP updates. The City may coordinate this vulnerability study with the climate change vulnerability assessment required by Government Code Section 65302(g)(4). At a minimum the Sea-level Rise vulnerability study shall:

1. Use the best available science to identify hazard zones and analyze potential impacts to coastal resources and development under a range of sea-level rise scenarios, including a high sea-level rise scenario. For each scenario, inundation, erosion, storm flooding, saltwater intrusion, and other coastal hazards influenced by sea-level rise will be examined, as well as the associated impacts to coastal resources including but not limited to vertical and lateral public access ways, recreational resources (including the California Coastal Trail), sensitive habitats, beach width and water quality, as well as residential development, infrastructure, public facilities, and cultural resources. In the examination of coastal resource impacts, the study shall consider the interaction between the physical impacts of sea-level rise and existing development. The best available science used to inform this study shall be reflective of the most current California Coastal Commission guidance, and peer reviewed studies that are widely accepted within the scientific community and locally relevant.
2. Based on the Citywide Vulnerability Study described above, develop appropriate SLR adaptation measures and policies to avoid and/or mitigate these impacts for incorporation into the LCP via future LCP updates. As applicable, recommendations may include such actions as:
 - a. Relocation of existing or planned development to safer locations, working with entities that plan or operate infrastructure;
 - b. Changes to LCP land uses, and siting and design standards for new development, to avoid and minimize identified risks;
 - c. Changes to standards for development in hazardous locations;
 - d. Changes to standards in bluff/shoreline erosion rates; and
 - e. Modifications to the LCP to ensure long-term protection of the function and connectivity of existing public access and recreation resources.

The Citywide Vulnerability Study shall be updated periodically as new science and modeling results and/or state guidance become available. This update shall occur approximately every 10 years, or more frequently as necessary, through an LCP amendment. (San Clemente LCP Land Use Plan 2018)

Adaptation Plan

- **Adaptation Plan.** Seek funding opportunities to develop a sea-level rise adaptation plan(s) that identifies how development, resources, and other vulnerable assets can adapt to the impacts of sea-level rise, including, but not limited to, the following:

- A. Examination of priorities for adaptation, timelines, options, specific projects to be implemented, phasing, and action triggers.
 - B. Identification of methods and standards to address repetitive property damage.
 - C. Identification of methods and standards to maintain public lateral beach access.
 - D. Assessment of seasonal and long-term shoreline changes and the potential for flooding or damage from erosion, sea-level rise, waves, storm surge, or seiche.
 - E. Evaluation of the feasibility of hazard avoidance, retreat, restoration of the sand supply, and beach nourishment in appropriate areas.
 - F. Consideration of the associated secondary impacts (e.g., loss of beach resulting from the use of seawalls) and trade-offs (i.e., who/what will benefit and who/what will be adversely impacted?) of adaptation strategies.
 - G. Recommendations for adapting existing development, public improvements, coastal access, recreational areas, and other coastal resources.
 - H. Evaluation of the feasibility of a program related to transfer of development rights.
 - I. Evaluation of the feasibility to form a geologic hazard abatement district to help fund sea-level rise adaptation. (Carlsbad Public Review Draft Land Use Plan 2019)
- **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. 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. (Pacifica Draft LCP Policies 2018)

Adaptation Plan for Highly Vulnerable Areas

- **Sea-Level Rise Adaptation Plan Implementation.** The City shall implement its Sea-Level Rise Adaptation Plan as expressed in the LCP's general and sub-area coastal hazard adaptation policies. Adaptation alternatives evaluated in the Adaptation Plan that are not specifically expressed in these sea-level rise hazard policies shall not be implemented without an amendment to the LCP, public notice, and opportunity for public input. The City shall monitor implementation and 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 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.
- 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. (Pacifica Draft LCP Policies 2018)

Sea-level Rise Hazard Overlay Zone

- **Zoning Ordinance Standards.** Develop and implement a sea-level rise hazard – shoreline development standards, as part of the Zoning Ordinance, for areas that are vulnerable to sea-level rise hazards. The development standards shall minimize risks to life and property associated with sea-level rise and ensure protection of the migrating shoreline. (Carlsbad Public Review Draft Land Use Plan 2019)

Beach Nourishment

- **Sand Nourishment.** Support sand nourishment programs using beach-quality sand to enhance the use, appearance and safety of the community's beaches when adverse impacts to beach, intertidal, and offshore resources and surf are minimized and when appropriate mitigation measures are incorporated. (San Clemente LCP Land Use Plan 2018)
- **Beach Nourishment.** In coordination with the California 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. (Pacifica Draft LCP Policies 2018)
- **Beach Nourishment.** Subject to issuance of a CDP, the beneficial reuse and placement of sediments removed from dredging projects, upland development, erosion control or flood

control facilities at appropriate points along the shoreline may be permitted for the purpose of beach nourishment. Any beach nourishment program for sediment deposition shall:

- a) Be designed to minimize adverse impacts to beaches, marine resources, on- and offshore ecological resources, restoration sites, water quality, as well as coastal access and recreational activities;
- b) Be designed to match existing beach sediment size and aesthetics as closely as feasible;
- c) Incorporate appropriate mitigation measures for any unavoidable coastal resource impacts;
- d) Consider the method, location, and timing of placement. Opportunistic sediment removed from catchment basins may be disposed of in the littoral system if it is tested and found to be safe and of suitable grain size and type. The program shall identify and designate appropriate beaches or offshore feeder sites in the littoral system for placement of suitable materials from catchment basins;
- e) Facilitate soft shoreline protective measures such as dune creation or restoration whenever feasible. (Santa Monica Draft Land Use Plan 2018)

Improve Drainage on Bluffs to Reduce Erosion

- **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 overwatering 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. (Pacifica Draft LCP Policies 2018)

Repetitive Loss

- **Damage to Existing Development.** When the structural components of existing, lawfully-constructed structures, including roofs, foundations, and/or interior areas, are damaged by more than 30%, due to coastal hazards, or continuously exposed to storm flooding for a tide cycle (6 hours) more than 1 time a year for a 3-year consecutive period, or meets the FEMA definition for repetitive loss, then that existing development becomes legally non-conforming and subject to applicable restrictions. (Santa Monica Draft Land Use Plan 2018)

Beach Management Plan

- **Shoreline Management Plan.** Develop and implement a shoreline management plan for the community's shoreline areas subject to wave hazards and erosion. The shoreline management

plan should provide for the protection of public beaches, coastal-dependent development, coastal access, public opportunities for coastal recreation and coastal resources and it should include sea-level rise adaptation strategies for existing development, including critical public infrastructure. The plan must evaluate the feasibility of coastal hazard avoidance, restoration of sand supply and beach width, beach nourishment, planned retreat and any other adaptation or management strategies determined appropriate and feasible. (San Clemente LCP Land Use Plan 2018)

- **Shoreline Management for High Priority Areas.** The community shall pursue development of a shoreline management plan for specific high priority beach subareas, including but not limited to the Pier, storm drain outlets, the sandy beach, public infrastructure, and public facilities that are most vulnerable to sea-level rise hazards, and incorporate the plan into the LCP. The shoreline management plan shall include adaptation strategies to address sea-level rise and coastal hazards and adapt to changes in wave, flooding, and erosion hazards in the short and long term for the specified area; appropriate management actions and policies to achieve the Plan's goals, which will include protecting and maximizing public access and recreation; funding for resources, and a realistic timeline; and a monitoring plan. The Shoreline Management Plan will prioritize "soft" adaptation strategies such as managed retreat, beach nourishment, living shorelines, and dune restoration over "hard" adaptation strategies such as seawalls or groins. The Plan timeline should reference points at which data monitoring indicates either or both of the following conditions:
 - a. The Fall beach width at any area of the shoreline has narrowed by 30% or more as compared to the recorded baseline beach width in 2017.
 - b. Any of the vulnerable assets identified for monitoring are damaged by more than 30% or continuously exposed to storm flooding for a tide cycle (6 hours) more than 1 time a year for a 3-year consecutive period. (Santa Monica Draft Land Use Plan 2018)

Transfer of Development Rights Program

- **Transfer of Development Rights.** Use the community'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. (Pacifica Draft LCP Policies 2018)

Geologic Hazard Abatement Districts (GHADs)

- **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. (Pacifica Draft LCP Policies 2018)

Aligning Local Coastal Programs with Local Hazard Mitigation Plans

- **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. (Pacifica Draft LCP Policies 2018)
- **Coordination.** Coordinate with the county and other appropriate agencies to ensure future updates to the Multi-Jurisdictional Hazard Mitigation Plan align with the community's LCP. (Carlsbad Public Review Draft Land Use Plan 2019)