

## Coastal Hazards Policy Comparison Table

### Climate Change Policies

LUP Update – 2018 Public Draft	Origin
<p><u>7-1. Hazard Avoidance.</u>            All new development shall be sited, sized, and designed to minimize risks to life and property and protect coastal resources both on and off-site from geologic, flood, and fire hazard, including for conditions anticipated to be compounded by climate change.</p>	2016 First Public Draft Policy
<p><u>7-2. Climate Change Agency Coordination.</u>            Coordinate with San Mateo County and other local, regional, and State agencies on efforts to study and implement climate change adaptation measures and resiliency planning including, but not limited to, green infrastructure, managed retreat, water conservation and reuse, and wildland fire prevention.</p>	2017 Planning Commission Public Draft Policy
<p><u>7-3. Climate Change Research.</u>            Consider, support and contribute to climate change research efforts including USGS coastal erosion modeling, as well as on-going analysis by the California Coastal Commission, Coastal Conservancy, Ocean Protection Council and other agencies working to further the understanding of climate change impacts on coastal communities</p>	2017 Planning Commission Public Draft Policy
<p><u>7-4. Climate Change Education.</u>            Provide and support climate change education throughout the community, including through the community college and local school district, the library, and City Parks and Recreation programming.</p>	2017 Planning Commission Public Draft Policy
<p><u>7-5. Climate Action Planning.</u>            Prepare a climate action plan with performance measures to document and track the city's greenhouse gas inventory and efforts to meet State greenhouse gas reduction targets over time.</p>	2017 Planning Commission Public Draft Policy

## Geologic and Seismic Hazards Policies

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<b><i>General Policies</i></b>	
<p><u>7-6. Minimize Geologic Hazard Consequences.</u> New development and redevelopment shall minimize risk to life and property and neither create nor contribute to geologic hazards.</p>	2016 First Public Draft Policy
<p><u>7-7. Seismic and Geologic Hazard Mapping.</u> Maintain updated maps of seismic and geologic hazard areas based on new and best available science.</p>	2016 First Public Draft Policy
<p><u>7-8. Geological Reports.</u> Review applications for new development, including grading and building permits and subdivisions, for adjacency to, threats from, and impacts on geologic hazards arising from seismic events, bluff or watercourse erosion, landslides, flooding, or other coastal and geologic hazards such as expansive soils and subsidence areas. In areas of known geologic hazards, as indicated on the Seismic Hazards and Liquefaction Potential map (Figure 7-2), a site-specific geological report shall be required. Reports shall identify mitigation measures where necessary to minimize potential impacts to life and property.</p>	<p><u>Original LUP Policy 4-6:</u> Applications for grading and building permits and applications for subdivisions shall be reviewed for adjacency to, threats from, and impacts on geologic hazards arising from seismic events, tsunami run-up, landslides, flooding, or other geologic hazards such as expansive soils and subsidence areas. In areas of known geologic hazards, as indicated on the Geologic Hazards Map, a geologic report shall be required. Mitigation measures shall be required where necessary.</p>
<p><u>7-9. Siting of New Critical, High-Occupancy, and Public Facilities.</u> Prohibit the siting of new critical facilities, structures involving high occupancies, and public facilities in areas of high geologic hazard unless such location is deemed essential to the public welfare. Where permitted, these structures will be sited, designed, and constructed to minimize and mitigate potential for damage due to ground deformation, seismically triggered subsidence, and landslide, or other coastal hazards.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-10. Hillside Construction Slope Limitation.</u> Require soils and geologic reports for all new development on slopes 20 percent or greater to be reviewed by appropriate City engineering staff or consultants selected by the City at the applicant's expense. Limit development in areas exceeding 20 percent slope to critical facilities and public infrastructure that cannot be located elsewhere, and beach accessways to the extent feasible.</p>	<p><u>Original LUP Policy 4-7:</u> In areas of flooding due to tsunamis or dam failure, no new development shall be permitted unless the applicant or subsequent study demonstrates that the hazard no longer exists or has been or will be reduced or eliminated by improvements which are consistent with the policies of this Plan and that the development</p>

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	will not contribute to flood hazards or require the expenditure of public funds for flood control works. Where not otherwise indicated, the flood hazard zone shall be considered to be a zone defined by the measured distance of 100 feet from the centerline of the creek to both sides of the creek. Non-structural agricultural uses, trails, roads, and parking lots shall be permitted, provided that such uses shall not be permitted within the area of stream corridor.
<p><u>7-11. Landslide Remediation and Stabilization.</u> Permit the remediation or stabilization of landslides that affect existing structures (pre-Coastal Act) or that threaten public health or safety except along coastal bluff or other eroding edges, such as streambanks. Permit remediation or stabilization to the extent necessary where an existing landslide prevents development of private property and remediation does not shift risk to other property, and the remediation project includes mitigation monitoring and reporting. Alternative remediation or stabilization techniques shall be analyzed to determine the least environmentally damaging alternative. Maximum feasible mitigation shall be incorporated into the project in order to minimize adverse impacts to resources.</p>	2016 First Public Draft Policy
<p><u>7-12. Geologic Event Analysis.</u> Require a detailed study to be conducted in the event that a substantial landslide or seismic event may have caused significant damage to a foundation or structure to document the geologic materials, foundations, or structures involved.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-13. Risk of Upset near Coastal Resource Areas.</u> Monitor and support remediation of hazardous materials sites exposed to erosion or other geologic hazards along the coastal bluffs and along beds and banks of watercourses.</p>	2017 Planning Commission Public Draft Policy
<b><i>Development near Beachfront and Blufftops Policies</i></b>	
<p><u>7-14. Development near Blufftops.</u> Permit development near blufftops only if design and setback provisions are adequate to assure stability and structural integrity for the expected economic life span of the development (at least 100 years) without reliance on shoreline protective devices, and if the development (including storm runoff, foot traffic, grading, irrigation, and septic tanks) will neither create nor contribute to erosion, geologic instability of the site or surrounding area, or otherwise harm coastal resources. Lateral trails near blufftops shall be set back a sufficient distance from</p>	<p><u>Original LUP Policy 4-3(B):</u> Permit bluff and cliff top development only if design and setback provisions are adequate to assure stability and structural integrity for the expected economic life span of the development (at least 50 years) and if the development (including storm runoff, foot traffic, grading, irrigation, and septic tanks) will neither</p>

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<p>the bluff edge to avoid impacts from erosion and sea level rise, at least 50 feet. Prohibit development on bluff faces except for stairways for public access to the beach.</p> <p>Development near bluffs is defined as development within 300 feet landward of a bluff line or edge, pursuant to California Code of Regulations Section 13577(h); however, for this policy, the setback shall be established utilizing best available science, such as that developed by USGS, the National Academy of Science, the National Academy of Engineering, the California Geological Survey, or the California Coastal Commission. Setbacks may also be needed based on the presence of ESHA and in such a case, the most conservative setback (greater) requirement applies. Setbacks shall also include room for buffers from hazards and/or ESHAs as applicable. Economic life is defined as the period over which a development is expected to be usable, with normal repairs and maintenance, for the purpose for which it was designed, and may range from a minimum of 100 years to perhaps 150 years for critical infrastructure.</p>	<p>create nor contribute significantly to erosion problems or geologic instability of the site or surrounding area. Prohibit development on bluff faces except for stairways for public access to the beach.</p>
<p><u>7-15. Bluff Face Development Prohibited.</u>          Prohibit development on bluff faces, except for engineered accessways to provide public beach access and shoreline protective devices legally authorized to protect existing structures (pre Coastal Act) and critical facilities as consistent with the policies of this LCP and the Coastal Act. Drainage pipes shall be allowed only where no other less environmentally damaging drain system is feasible, and the drain pipes are sited and designed to minimize impacts to the bluff face, toe, and beach, be visually unobtrusive, and are removed overtime if exposed. Drainage devices extending over the bluff face shall not be permitted. Permitted development shall be constructed and designed to not contribute to further erosion of the bluff face and to be visually subordinate with the surrounding area.</p>	<p><u>Original LUP Policy 4-5:</u>          No development shall be permitted on the bluff face, except for engineered accessways to provide public beach access. Drainage pipes shall be allowed only where no other less environmentally damaging drain system is feasible and the drain pipes are designed and placed to minimize impacts to the bluff face, toe, and beach. Drainage devices extending over the bluff face shall not be permitted if water can be directed away from the bluff face.</p>
<p><u>7-16. Beach and Bluff Setbacks.</u>          Ensure that structures are set back far enough inland from the beach or bluff edge such that they will not be endangered by erosion (including sea level rise induced erosion) over the economic life of the structure plus an added geologic stability factors of safety of 1.5 for the static condition and 1.1 for the seismic condition, without the use of a shoreline protective device. Require geological reports to include a detailed, site-specific stability evaluation to determine the size of the setback, taking into consideration the highest projection of sea level rise and potential bluff and shoreline retreat based on best available science, over the economic life of the structure (at least 100 years).</p>	<p>2016 First Public Draft Policy</p>

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<p><u>7-17. Site Stability Evaluation near Beachfront or Blufftops.</u>            Require, for development near the beachfront or blufftops, the submittal of a site stability evaluation report using a 100-year storm performance standard to establish the expected economic life of the structure (at least 100 years for residential or commercial, 150 years for critical facilities) and the appropriate setback from the beach or bluff edge. The analysis shall demonstrate a factor of safety greater than or equal to 1.5 for static conditions and greater than or equal to 1.1 for seismic conditions. The report shall be prepared by a soils engineer or a certified engineering geologist based on an on-site evaluation, and shall consider:</p> <ol style="list-style-type: none"> <li>a. Historic and projected rates of erosion, including potential erosion taking into account future sea level rise, and possible changes in shore configuration and sand transport. Sources to be investigated include recorded land surveys and tax assessment records in addition to the use of historic maps and photographs where available, and possible changes in shore configuration and transport;</li> <li>b. Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site and the proposed development;</li> <li>c. Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features such as bedding, joints, and faults;</li> <li>d. Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity;</li> <li>e. Wave and tidal action, including effects of marine erosion on bluffs;</li> <li>f. Ground and surface water conditions and variations, including hydrologic changes caused by the development (e.g., introduction of irrigation water to the ground- water system; alterations in surface drainage);</li> <li>g. Potential effects of seismic forces resulting from a maximum credible earthquake;</li> <li>h. Effects of the proposed development including siting and design of structures, landscaping, drainage, grading, and impacts of construction activity on the stability of the site and adjacent area;</li> </ol>	<p><u>Original LUP Policy 4-3(D):</u>            Require the submittal of a site stability evaluation report for an area of stability demonstration prepared by a soils engineer or a certified engineering geologist, as appropriate, acting within their areas of expertise, based on an on-site evaluation. The report shall consider:</p> <ol style="list-style-type: none"> <li>1. Historic, current and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs where available, and possible changes in shore configuration and transport.</li> <li>2. Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site and the proposed development.</li> <li>3. Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features such as bedding, joints, and faults.</li> <li>4. Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity.</li> <li>5. Wave and tidal action, including effects of marine erosion on seacliffs.</li> <li>6. Ground and surface water conditions and variations, including hydrologic changes caused by the development (e.g., introduction of irrigation water to the ground- water system; alterations in surface drainage).</li> </ol>

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<ul style="list-style-type: none"> <li>i. Any other factors that may affect slope stability; and</li> <li>j. Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e., landscaping and drainage design).</li> </ul>	<ul style="list-style-type: none"> <li>7. Potential effects of seismic forces resulting from a maximum credible earthquake.</li> <li>8. Effects of the proposed development including siting and design of structures, landscaping, drainage, grading, and impacts of construction activity on the stability of the site and adjacent area.</li> <li>9. Any other factors that may affect slope stability.</li> <li>10. Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e., landscaping and drainage design).</li> </ul>
<p><u>7-18. Development near Blufftops.</u> All new development near beachfront and blufftops shall be sized, sited and designed to minimize risk from wave run-up, flooding in the event of a 100-year storm, and beach and bluff erosion hazards in consideration of sea level rise without requiring a shoreline protection structure at any time during the life of the development.</p>	<p>2016 First Public Draft Policy</p>
<p><u>7-19. Land Divisions near Beachfront and Blufftops.</u> Land divisions, including subdivisions, lot splits, lot line adjustments, and certificates of compliance which create new lots adjacent to beachfront or blufftops, shall not be permitted unless the subdivision can be shown to create lots which can be developed without requiring a current or future bluff or shoreline protection structure. No new lots shall be created that could require shoreline protection or bluff stabilization structures.</p>	<p><u>Original LUP Policy 4-3(C):</u> Prohibit land divisions or new structures identified in areas described in A and B above that would require the need for bluff protection work.</p>
<p><u>7-20. Grading near Beachfront or Blufftop.</u> Require that any grading necessary to establish proper drainage, install minor improvement (e.g. trails), to restore eroded areas, or to provide permitted accessways directs water runoff away from the edge of the bluff or requires runoff to be handled so as to prevent damage to the bluff from surface and percolating water.</p>	<p><u>Original LUP Policy 4-4 (in part):</u> In the absence of a determination supported by a site-specific survey by a qualified geologist and biologist to the contrary, within 100 feet from the bluff or foredune edge, drought-tolerant coastal vegetation capable of enhancing bluff and dune stability shall be installed and maintained as a part of any new development. Grading as may be required to establish proper drainage, to install minor improvement (e.g. trails) and to restore eroded areas and to provide permitted</p>

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	accessways shall direct water runoff away from the edge of the bluff or be handled in a manner so as to prevent damage to the bluff by surface and percolating water.
<p><u>7-21. Beachfront or Blufftop Vegetation.</u>            Require the installation and maintenance of drought-tolerant native coastal vegetation capable of enhancing bluff and dune stability within 100 feet from the bluff or foredune edge as part of any new development near the beachfront or blufftops.</p>	<p><u>Original LUP Policy 4-4 (in part):</u>            In the absence of a determination supported by a site-specific survey by a qualified geologist and biologist to the contrary, within 100 feet from the bluff or foredune edge, drought-tolerant coastal vegetation capable of enhancing bluff and dune stability shall be installed and maintained as a part of any new development. Grading as may be required to establish proper drainage, to install minor improvement (e.g. trails) and to restore eroded areas and to provide permitted accessways shall direct water runoff away from the edge of the bluff or be handled in a manner so as to prevent damage to the bluff by surface and percolating water.</p>
<p><u>7-22. Blufftop Development Relocation Program.</u>            Develop a relocation program, in conjunction with state and federal agencies, to provide incentives to relocate development out of hazardous areas and to acquire oceanfront properties that have been or will be damaged by coastal hazards in situations where relocation of development to a safer location on the site, or additional protection measures, are not feasible.</p>	2016 First Public Draft Policy
<b><i>Shoreline and Bluff Protection Policies</i></b>	

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<p><u>7-23. Shoreline Management Plans.</u>            Develop shoreline management plans for shoreline areas subject to wave hazards and erosion, such as for Surfers Beach and Mirada Road, in coordination with San Mateo County and the Harbor District. Any plans should include:</p> <ol style="list-style-type: none"> <li>a. An examination of local and regional annual erosion rates in order to reflect current shoreline changes;</li> <li>b. Standard engineering plans and analyses defining the specific types of armoring that would be acceptable or preferable for specific areas if otherwise allowed, and where appropriate, identification of the types of armoring that should not be considered for certain areas or beaches, in order to minimize risks and impacts from armoring to public access and scenic resources along the shoreline and beach recreation areas;</li> <li>c. Standard alternatives feasibility analysis that would be a required element of all hazard response projects and that would require applicants to go through a series of steps to assure that hard protective devices were only used as a last resort;</li> <li>d. Standard conditions and monitoring requirements that should include mechanisms to ensure shoreline protection effectiveness and public safety with provisions for the removal or ineffective or hazardous protective structures as well as programs to address beach replenishment and sand supply; and</li> <li>e. Procedures to address emergency armoring, such as: coordination with property owners and for field inspections before and after storm seasons; guidance for types of temporary protective structures preferred; mitigation requirements; and a provision for removal of temporary structures if no follow up permit is filed.</li> <li>f. The alternatives feasibility analysis should require, but not be limited to, the use of technical evaluations of the site (geotechnical reports, engineering geology reports, wave uprush reports etc.), an examination of all other options (removal, relocation, sand replenishment, no action etc.), and a conclusion that a shoreline protective device would be the “best option” (most protective of the public trust, best long-term solution etc.) for the subject site.</li> </ol>	<p>2016 First Public Draft Policy</p>
<p><u>7-24. Shoreline Protective Devices.</u>            Do not permit new development or redevelopment that would require the construction of protective devices that would substantially alter landforms along bluffs and cliffs over the economic life of the development or redevelopment (at least 100 years).</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>

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<p><u>7-25. Protection for Critical Facilities.</u> Allow shoreline protective devices for critical facilities, including the SAM Wastewater Treatment Plant, that may require shoreline protective devices or other coastal hazard adaptation measures in order to continue providing needed services to the community. Mitigation programs shall consider, at a minimum, impacts to shoreline sand supply, impacts to public access and recreation, and impacts from reflected wave energy over the life of the shoreline protective device. Shoreline protective devices shall be designed to preserve the maximum amount of existing beach, ensure lateral access along the shoreline, and visually blend with the surrounding shoreline; and shall be designed so as to not encompass an area larger than that necessary to protect critical facilities.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-26. Protection for Existing Structures.</u> Permit shoreline protective devices for existing structures (pre-Coastal Act) in danger from erosion only if no feasible alternative exists. Permitted shoreline protective devices must minimize impacts to coastal resources and provide mitigation measures and mitigation monitoring. Mitigation programs shall consider, at a minimum, impacts to shoreline sand supply, impacts to public access and recreation, and impacts from reflected wave energy over the life of the shoreline protective device. Shoreline protective devices shall be designed to preserve the maximum amount of existing beach, ensure lateral access along the shoreline, and visually blend with the surrounding shoreline; and shall be designed so as to not encompass an area larger than that necessary to protect existing structures. Existing structures relying on shoreline protective devices shall not be substantially altered or redeveloped without removal of the shoreline protective devices.</p>	<p><u>Original LUP Policy 4-1:</u> Seawalls and cliff-retaining structures shall not be permitted unless the City determines they are necessary for preservation of existing structures, and has determined that there are no other less environmentally damaging alternatives for protection of existing development. If such structures are permitted, they shall be designed to preserve the maximum amount of existing beach, to ensure lateral access along the shoreline, and to assure that all existing endangered development within the area of the improvement is protected as a part of the project; such structures shall not be designed so as to encompass an area larger than that necessary to protect existing structures. An applicant for such a structure shall include a geologic report indicating that the structure will succeed in stabilizing that portion of the shoreline which is subject to severe erosion and will not aggravate erosion in other shoreline areas.</p>
<p><u>7-27. Accessory Structure Protection Prohibited.</u> Do not permit shoreline protection structures for the sole purpose of protecting an ancillary or accessory structure. Such accessory structures shall be removed if it is determined that the structure is in danger from erosion, flooding or wave uprush or if the bluff edge encroaches to</p>	<p>2016 First Public Draft Policy</p>

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<p>within 10 feet of the structure as a result of erosion, landslide or other form of bluff collapse. Accessory structures shall be constructed and designed to be removed or relocated in the event of threat from erosion, bluff failure or wave hazards.</p>	
<p><u>7-28. Shoreline Protection Waiver.</u>          Applicants for new development and redevelopment shall agree to waive rights to future shoreline protection. In the event that development is threatened by erosion or other hazards and it needs to be removed or relocated, the owner bears full responsibility for all costs and must work with the City to implement the mitigation in a timely manner.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-29. Geological Reports for Shoreline Protection.</u>          Require applicants for hard shoreline protection to provide a geologic report indicating that the structure will succeed in stabilizing that portion of the shoreline which is subject to severe erosion and will not aggravate erosion in other shoreline areas.</p>	<p><u>Original LUP Policy 4-1:</u>          Seawalls and cliff-retaining structures shall not be permitted unless the City determines they are necessary for preservation of existing structures, and has determined that there are no other less environmentally damaging alternatives for protection of existing development. If such structures are permitted, they shall be designed to preserve the maximum amount of existing beach, to ensure lateral access along the shoreline, and to assure that all existing endangered development within the area of the improvement is protected as a part of the project; such structures shall not be designed so as to encompass an area larger than that necessary to protect existing structures. An applicant for such a structure shall include a geologic report indicating that the structure will succeed in stabilizing that portion of the shoreline which is subject to severe erosion and will not aggravate erosion in other shoreline areas.</p>
<p><u>7-30. Soft Protection.</u>          Require development to use “soft” or “natural” solutions or “living shorelines” where appropriate as a preferred alternative to the placement of hard shoreline protection in order to protect development or other resources and to enhance natural resource areas. Examples of soft solutions include vegetative planting, dune restoration, and sand nourishment. Soft</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>

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protection devices shall be fully evaluated for coastal resource impacts and shall require mitigation for any unavoidable impacts.	
<p><u>7-31. Removal of Shoreline Protection.</u> Require removal of existing shoreline protective devices when the structure requiring protection is redeveloped, removed, or no longer requires a protective device, whichever occurs first. If removal is not possible, require a waiver of any rights to retain the protective device to protect any structure other than the one that existed at the time the protective device was constructed or permitted. Require restoration of beach area to public use when removal of protective devices is feasible.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-32. Shoreline Protection Removal Priorities.</u> Identify priority areas where shoreline protection structures should be removed if they are no longer needed or if in a state of great disrepair, including areas where structures threaten the survival of wetlands and other habitats, beaches, trails, and other recreational areas.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-33. Maintaining Existing Protection.</u> Allow properly designed shoreline armoring to remain for the foreseeable future if the removal of the armoring would put existing development at risk and would not otherwise result in the significant protection or enhancement of coastal resources. Allow non-exempt repair and maintenance of existing, legally permitted shoreline protective devices only if such activities do not result in an enlargement or extension of armoring, and if mitigation measures are included as necessary. Replacement of 50% or more of the protective device shall constitute a replacement structure subject to provisions applicable to new shoreline protective devices. Establish conditions that provide for potential future removal of the armoring in coordination with surrounding development.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-34. Protection Permit Expiration.</u> Permits for bluff and shoreline protective devices shall be tied to the life of the structure it has been authorized to protect and shall expire when the structure requiring protection is redeveloped, is no longer present, or no longer requires a protective device, whichever occurs first.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-35. Shoreline Protection Monitoring.</u> Require as a condition of approval a monitoring program for new shoreline protective devices and their impacts on the surrounding area at the applicant's expense. The monitoring program should include a plan for the periodic monitoring of permitted shoreline protective devices to</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment

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examine for structural damage, excessive scour, or other impacts from coastal hazards and sea level rise, as well as of impacts to shoreline processes and beach width both at the project site and the broader area and/or littoral cell as feasible, and analysis of the need for additional mitigation. Require periodic assessment of changed site conditions (e.g. period Mean High Tide Line surveys) and provide for such actions as removal or modification of armoring in the future if it is no longer needed for protection or if warranted by changed site conditions.	
<u>7-36. Exceptions for Retention of Shoreline Protective Devices.</u> Require, on lots with existing pre-Coastal Act or permitted armoring, a waiver of rights to retain such protection for any structures other than the structure that existed at the time the armoring was constructed or permitted.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-37. Permit Tracking.</u> Develop a permit tracking and monitoring system to identify and prevent illegal and unpermitted construction of shoreline protective devices (e.g. protection is no longer warranted by changed site conditions, the economic life of the structure being protected has expired, the structure being protected has redeveloped or is no longer present).	2016 First Public Draft Policy
<u>7-38. Shoreline Protective Device Inventory.</u> Develop an inventory to track and map all shoreline protective devices in coordination with permit tracking and monitoring efforts.	New 2018 Planning Commission Public Draft Policy

### Flood Hazards Policies

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<b><i>General Policies</i></b>	
<u>7-39. Floodway Development Prohibition.</u> Prohibit development in a designated floodway where such development would endanger life or contribute to flood hazards by decreasing floodway capacity or directing water flows outside of the floodway.	2016 First Public Draft Policy
<u>7-40. Drainage Capacity.</u> Maintain and improve the City’s stormwater management system to prevent or mitigate impacts during flood events.	2016 First Public Draft Policy

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<p><u>7-41. Interagency Coordination.</u> Coordinate with federal, state and local jurisdictions, and agencies involved in the mitigation of flood hazards from dam inundation, tsunamis, sea level rise, and major flood events (e.g. SFWD, NOAA, Cal OES, FEMA).</p>	2016 First Public Draft Policy
<p><u>7-42. Emergency Warning System.</u> Update, maintain, and improve the City’s emergency warning system as consistent with local, state, and federal standards.</p>	New 2018 Planning Commission Public Draft Policy
<p><u>7-43. Flood Hazard Mapping.</u> Maintain updated flood hazard mapping (flooding, tsunami, and dam or impoundment inundation) based on new and best available information, including the most current official FEMA FIRM to determine the general location of flooding hazard areas. Support and pursue study and mapping of inland watercourses, prioritizing Pilarcitos Creek, as well as updated dam inundation and local impoundment mapping.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-44. New Development in Flood Zones.</u> Prohibit new development within the 100-year flood hazard zone unless no alternative building site exists, proper mitigation measures are provided to minimize or eliminate risks to life and property from flood hazard, and the development would not constitute a public nuisance.</p>	2016 First Public Draft Policy
<p><u>7-45. New Development Adjacent to Flood Zones.</u> Require new development in areas proximate to identified 100-year flood hazard zones to identify opportunities to improve site drainage, address biological resource and water quality issues, and reduce contributions to flood hazards.</p>	2016 First Public Draft Policy
<p><u>7-46. Flood Hazard Avoidance for New Development.</u> Ensure that no new permitted development causes or contributes to flood hazards.</p>	<p><u>Original LUP Policy 4-8:</u> No new permitted development shall cause or contribute to flood hazards.</p>
<p><u>7-47. Flood Protection.</u> Prohibit habitable space at elevations subject to wave/flood risk. New development that must be located in areas subject to current or future flood/wave action shall be sited and designed to be capable of withstanding such impacts in compliance with FEMA, NFIP, and Coastal Act requirements. This shall include elevating all finished floor elevations at least 2 feet above the 100-year flood event, taking into account future sea level rise and projected storm events. Allow retrofitting for existing development in areas subject to current or future flood/wave action, including through elevation of habitable areas, use of break-away walls, etc. Consider</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment

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the visual and other coastal resource protection policies of this LCP in the siting and design of raised development and other adaptation measures.	
<u>7-48. Real Estate Disclosure.</u> Require disclosure of the presence of flooding hazards during transactions of property located within areas of special flood hazard.	2016 First Public Draft Policy, Safety Element
<u>7-49. Flood Hazard Abatement.</u> Support measures for the abatement of flooding hazards, including but not limited to: a. Removal or relocation of development from flood hazard areas; b. Prioritizing green infrastructure approaches; c. Restoration of flood plains and meander belts of drainages that were channelized; d. Construction of impoundments or channel diversions when necessary, provided that adequate mitigation of environmental impacts can be demonstrated; and e. Debris clearance and silt removal programs conducted in a manner so as not to disrupt existing riparian communities.	2016 First Public Draft Policy, Safety Element
<u>7-50. Critical Facilities.</u> Avoid locating critical facilities in areas susceptible to tsunami inundation. If no feasible alternative exists and a critical facility must be located in the tsunami inundation zone, require the development incorporate mitigation measures to resist tsunami damage and facilitate evacuation on short notice.	2016 First Public Draft Policy, Safety Element
<u>7-51. Flood Protection Evaluation.</u> Evaluate impacts from flood protection measures by requiring new development to evaluate potential impacts to adjacent or downstream properties from all proposed structural flood protection measures to ensure that development will not create adverse direct and/or cumulative impacts either on-site or off-site.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<b><i>Localized Flood Policies</i></b>	
<u>7-52. Citywide Drainage Master Plan.</u> Update the Citywide Drainage Master Plan and undertake steps to increase system capacity, prioritizing nature-based green infrastructure approaches (e.g. retaining runoff at site, restoring flood plain and meander belts of drainages that were channelized, maintaining and increasing permeable surfaces and native plants in watersheds, requiring sheet flow in	2016 First Public Draft Policy

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<p>subdivisions adjacent to flood-prone channelized watercourse) over engineering solutions (e.g. upsizing existing storm drain pipes, adding storm drain lines parallel to existing ditches, reconstructing ditches to increase capacity).</p>	
<p><u>7-53. Dam Inundation Impact Avoidance.</u>            Update the Pilarcitos dam inundation evaluation periodically to account for changes in localized flood risk. Establish setbacks and minimum building pad elevations for new development to avoid and mitigate flooding impacts in the event of dam failure, in coordination with SFWD dam management.</p>	<p>2017 Planning Commission Public Draft Policy</p>
<p><u>7-54. Impoundment Impact Avoidance.</u>            Study the condition and function of the impoundments located within and on the hills above the city limits, and assess the cumulative impacts of anticipated development within watersheds. Establish avoidance measures and require on-going maintenance to minimize risk of flood and water quality impacts and protect ESHAs associated with impoundments.</p>	<p>2017 Planning Commission Public Draft Policy</p>
<p><u>7-55. Tsunami and Dam Failure.</u>            Except within established neighborhoods as identified in Chapter 2. Development, do not permit new development in areas at risk of flooding due to tsunamis or dam or impoundment failure, unless a technical study completed at the applicant’s expense demonstrates all of the following:</p> <ul style="list-style-type: none"> <li>a. The hazard no longer exists or has been or will be reduced or eliminated by improvements which are consistent with the policies of this Plan; and</li> <li>b. The development will not contribute to flood hazards; and</li> <li>c. The development will not require the expenditure of public funds for flood control works.</li> </ul>	<p><u>Original LUP Policy 4-7:</u>            In areas of flooding due to tsunamis or dam failure, no new development shall be permitted unless the applicant or subsequent study demonstrates that the hazard no longer exists or has been or will be reduced or eliminated by improvements which are consistent with the policies of this Plan and that the development will not contribute to flood hazards or require the expenditure of public funds for flood control works. Where not otherwise indicated, the flood hazard zone shall be considered to be a zone defined by the measured distance of 100 feet from the centerline of the creek to both sides of the creek. Non-structural agricultural uses, trails, roads, and parking lots shall be permitted, provided that such uses shall not be permitted within the area of stream corridor.</p>

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<b><i>Watercourse Protection Policies</i></b>	
<u>7-56. Erosion Protection for Watercourses.</u> Protect watercourses from erosion impacts. Examples include but are not limited to maintaining riparian vegetation where present to slow water flow; avoiding hardening banks and channels which exacerbates erosion up or downstream; restoring the floodplain and meander belt; and providing green infrastructure drainage facilities to reduce run-off into the City’s various watercourses.	2017 Planning Commission Public Draft Policy
<u>7-57. Watercourse Monitoring.</u> Monitor and assess the condition of watercourses with respect to changes in erosion and sedimentation. In cases where undesirable changes are identified (e.g. the beginning of incising or head cutting conditions, bank retreat, or subsidence), implement restoration measures prior to such conditions becoming irreparable through low impact green infrastructure intervention measures.	2017 Planning Commission Public Draft Policy
<u>7-58. Water Quality of Watercourses.</u> Monitor water quality of watercourses to ensure that potential upstream contaminants are identified and abated.	2017 Planning Commission Public Draft Policy
<u>7-59. Development near Watercourses.</u> Require that any new development or redevelopment be located outside the riparian buffer as determined in the Natural Resources chapter of the LUP, incorporate low impact development (LID) design features including green infrastructure, limited impervious surface areas, and use of nontoxic building materials.	2017 Planning Commission Public Draft Policy
<u>7-60. Impervious Surface Limitations in Development.</u> Minimize the installation of new impervious surfaces, especially directly-connected impervious area, and particularly in areas west of Highway 1 and within flood zones, such that there will be no increase in surface runoff. Where feasible, increase the area of pervious surfaces in redevelopment to reduce runoff and minimize additional contributions to waterways.	2017 Planning Commission Public Draft Policy

**Fire Hazards Policies**

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<p><u>7-61. Minimize Fire Hazards.</u>            Minimize fire hazards in the city by appropriately siting development and managing fuels and ensuring adequate firebreaks and buffers around high-risk areas. Coordinate with the Coastside Fire Protection District (CFPD) and the City’s Public Works Department to maintain long-term fire hazard reduction projects, such as ongoing vegetation clearance on public and private roads.</p>	2016 First Public Draft Policy
<p><u>7-62. Fire District Coordination.</u>            Work with the CFPD to provide fire prevention services and programming and ensure adequate emergency response services. Request updates from the District regarding training and fire prevention programs to ensure that the City is supported adequately through best practices.</p>	2016 First Public Draft Policy
<p><u>7-63. Impact Fees.</u>            Continue to require new development to pay a fee and/or participate in an Assessment District for CFPD equipment, facility expansions, additional man power, and other capital improvements when the need arises to accommodate the increased service demand of new development and/or provide for needed capital improvements through future Capital Improvement Programs.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-64. Fire Prevention Programs.</u>            Coordinate with the CFPD to ensure the continuation of fire prevention programs such as weed abatement and enforcement of Uniform Fire Code Requirements, and ensure consistency with and implementation of applicable fire protection plans such as the City and County’s Local Hazard Mitigation Plans, Cal Fire’s CZU Unit Plan, and the Cal Office of Emergency Services Plan. Support the District in their efforts to provide community education about fire prevention and fire safety.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-65. Fire Hazard Avoidance for Development.</u>            Require that both new development and redevelopment, including remodeling and additions, adhere to most current Wildland-Urban Interface fire code and minimize risks to life and property from fire hazard through:            a. Assessing site-specific characteristics such as topography, slope, vegetation type, wind patterns etc.;</p>	2016 First Public Draft Policy

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<ul style="list-style-type: none"> <li>b. Siting and designing development to avoid hazardous locations, including siting to avoid the need for fuel modification within sensitive coastal resources and their buffer zones;</li> <li>c. Providing adequate ingress and egress for fire equipment access;</li> <li>d. Incorporation of fuel modification and brush clearance techniques for the development site and adjacent private or public roads in accordance with applicable fire safety requirements and carried out in a manner which avoids impacts to environmentally sensitive habitat and their buffer areas unless necessary to abate a public health and safety concern;</li> <li>e. Use of appropriate building materials and design features to ensure the minimum amount of required fuel modification;</li> <li>f. Use of fire-retardant, native plant species in landscaping, and removal of fire-prone, non-native and invasive species such as Cape ivy and Blue gum eucalyptus to reduce fuel load where appropriate, avoiding adverse impacts to sensitive species that use such habitats.</li> </ul>	
<p><u>7-66. Fire Marshal Review.</u>            All discretionary permit applications for new habitable structures shall be reviewed by the City Fire Marshal to determine if any thinning or clearing of native vegetation is required for fuel modification. Fuel modification requirements may be reduced under certain circumstances, such as when equivalent methods of wildlife risk abatement are included in the project design.</p>	New 2018 Planning Commission Public Draft Policy
<p><u>7-67. Fuel Modification Zones.</u>            For new habitable structures requiring fuel modification, establish two fuel modification zones as follows: Zone 1 shall extend 30 feet from the exterior walls and requires thinning, pruning, or removal and replacement of vegetation; Zone 2 shall extend the required distance beyond 30 feet and requires thinning of non-native vegetation and removal of dead vegetation.</p>	New 2018 Planning Commission Public Draft Policy
<p><u>7-68. Fuel Modification Performance Standards.</u>            The City Fire Marshal retains the discretion to reduce or expand the fuel modification zones and requirements on a case-by-case basis, with specific findings due to factors that may include but are not limited to building material, topography, vegetation type, and fuel load. Required fuel modification shall adhere to the following performance standards:</p> <ul style="list-style-type: none"> <li>a. Vegetation shall be thinned to a height of 18 inches.</li> </ul>	New 2018 Planning Commission Public Draft Policy

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<p>b. Root systems and stumps shall be left in place to minimize soil disturbance and soil erosion.</p> <p>c. All fuel modification work shall be done by hand crews only.</p>	
<p><u>7-69. Redevelopment Following Disaster.</u> Allow the replacement or redevelopment following natural disasters provided that the replacement or redevelopment conforms to all current development standards and Wildland-Urban Interface Code, is the same use and general size of the destroyed structure, and avoids or sufficiently mitigates any coastal resource impacts.</p>	New 2018 Planning Commission Public Draft Policy
<p><u>7-70. Fire Risk Avoidance.</u> Avoid, where feasible, approving new development in areas subject to high wildfire risk. If avoidance is not feasible, condition such new development on implementation of measures to reduce risks associated with that development.</p>	2016 First Public Draft Policy
<p><u>7-71. Fire Risk Avoidance for New Subdivisions.</u> Implement the Subdivision Map Act to ensure that new subdivisions are established with adequate emergency vehicle access, evacuation standards for residential development, and can be maintained without requiring fuel modification within ESHAs and their buffer areas. Prohibit the creation of new developable lots within high fire hazard zones.</p>	2017 Planning Commission Public Draft Policy
<p><u>7-72. Fire Plan Check Review of New Development.</u> Coordinate with the CFPD to allow the District to review all applications for new development. The District’s review should ensure compliance with fire safety regulations and assess potential impacts to existing fire protection services and the need for additional and expanded services.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-73. Emergency Vehicle Accessibility of New Development.</u> Require new development to assure that it can be adequately served by the CFPD, provide adequate access for fire protection vehicles, and guarantee sufficient water supply and fire flow. Development in rural or high fire hazard areas should be clustered near major roads to ensure access.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-74. Street Identification and Visibility.</u> Ensure that all roads, streets, and major public buildings are identified in a manner that is clearly visible to fire protection and other emergency vehicles.</p>	2016 First Public Draft Policy, Safety Element

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<p><u>7-75. Fire Hazard Avoidance of Critical Facilities.</u> Locate, where feasible, new critical public facilities outside of high fire risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities. If no feasible alternative exists, identify construction methods or other methods to minimize risk.</p>	2016 First Public Draft Policy
<p><u>7-76. Fire Flow Upgrades.</u> Work with the CFPD and Coastside County Water District to establish and maintain a priority list for upgrading fire flow capabilities in neighborhoods that may have inadequate fire flows. Fire flow upgrades may require upsizing water mains solely for the purpose of establishing and maintaining adequate fire flow to protect existing development; and not for accommodating future growth. This distinction shall be acknowledged and documented for each such upgrade and restrictions limiting future use of expanded capacity to fire protection shall be implemented.</p>	2016 First Public Draft Policy, Safety Element
<p><u>7-77. Fire and ESHA Protection Policy Consistency.</u> Cooperate with the CFPD to ensure consistency between the District’s fuel management and fire protection policies and those of the Half Moon Bay LCP, particularly those relating to the protection of ESHA, agreeing on measures to balance the need for fire protection for existing structures with the need to protect environmental resources. Examples of such measures include sprinkler system retrofits, smart landscaping, restoring ESHAs for better biological function and defensible fire-fighting space, surrounding ESHAs with fire breaks, and limiting activities in areas adjacent to ESHAs.</p>	2016 First Public Draft Policy
<p><u>7-78. Fire-prone Vegetation Removal.</u> To the maximum extent feasible, require applicants to remove on-site fire-prone plant species and replace with native species of higher habitat value. Where fuel modification within ESHAs is unavoidable, due to a public health and safety concern, or there is potential to impact habitat for protected species, use environmentally responsible and nature-based approaches to remove fire-prone vegetation (e.g. grazing sheep or goats penned away from the highest value habitat area). Fuel modification plans within ESHA shall require review and approval by the City and shall include monitoring and mitigation.</p>	New 2018 Planning Commission Public Draft Policy
<p><u>7-79. Future Risk.</u> Plan for future fire risk as a result of climate change or other factors and alert public and private landowners in future risk areas, using best available science. Coordinate with CFPD to periodically reassess for the need for additional emergency services in the future.</p>	2016 First Public Draft Policy

## Sea Level Rise Policies

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<b><i>General Policies</i></b>	
<u>7-80. Sea Level Rise Adaptation.</u> Consider long-term climate change and sea-level rise for hazard mitigation and incorporate adaptive strategies in planning for future public facilities and infrastructure.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-81. Interagency Cooperation.</u> Continue to work with other state and local jurisdictions to address sea level rise issues.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-82. Coastal Flood Hazard Mapping.</u> Maintain and update coastal hazard maps, including areas subject to wave action and flooding due to sea level rise.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-83. Dynamic Sea Level Rise Adaptation Strategy.</u> Continue to review and use current and best available sea level rise science and projections and periodically identify coastal resources, development, infrastructure, and communities that are vulnerable to sea level rise impacts. Use this information to continue to develop or adjust adaptation strategies.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-84. Outreach and Education.</u> Encourage public outreach and education addressing climate change and sea level rise impacts on the City’s coastal resources, development, and infrastructure. Provide public information and guidance through workshops, signage, and other outreach tools.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<b><i>Sea Level Rise Development Policies</i></b>	
<u>7-85. New Development.</u> Ensure that new development is sited and designed to be safe with consideration for sea level rise impacts such as flooding, wave run up, and erosion that may occur over the economic life of the structure (at least 100 years).	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-86. Site-Specific Hazard Evaluation.</u> Require, as part of geological report requirements in areas vulnerable to sea level rise impacts, site-specific evaluation of coastal hazards due to the high projection of sea level rise over the full projected life of any proposed development. Analyses should be conducted by a certified Civil Engineer or Engineering Geologist with expertise in coastal processes and shall be based on best available science.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<p><u>7-87. Building Codes and Standards.</u>            Establish and implement building codes and standards for development siting and construction that avoid or minimize risks from flooding and erosion and increase resilience to extreme events within sea level rise hazard zones. Provide additional development controls in areas that are identified in the LCP as hazard areas.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-88. Subdivisions.</u>            Limit subdivisions in areas vulnerable to coastal hazards, including hazards exacerbated by sea level rise, by prohibiting any new land divisions, including subdivisions, lot splits, lot line adjustments, and/or certificates of compliance that create new beachfront or blufftop lots unless the lots can meet specific criteria that ensure that when the lots are developed, the development will not be exposed to hazards or pose any risks to protection of coastal resources.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-89. Assumption of Risk.</u>            Require development permit conditions and deed restrictions that ensure that property owners understand and assume the risks, and mitigate the coastal resource impacts, of new development and redevelopment in a hazardous area. Include conditions of approval for such development and redevelopment that require recorded assumptions of risk, waiver of claim of damage or liability against the City of Half Moon Bay, waiver of rights to future shoreline armoring, and any other acknowledgements and mitigation measures necessary to internalize risk decisions. Where necessary, require property owners to set aside money, such as in the form of a bond, as a contingency if it becomes necessary to modify, relocate, or remove development that becomes threatened in the future.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-90. Real Estate Disclosure.</u>            Require sellers of real estate to disclose permit conditions related to coastal hazards, or property defects or vulnerabilities, including information about known current and potential future vulnerabilities to sea level rise, to prospective buyers prior to closing escrow.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-91. Non-conforming Structures.</u>            Consider a structure non-conforming when the seaward edge of the structure no longer meets the standards or setback that would be required for new development at the location. Allow non-exempt repair and maintenance and modifications only if they do not increase the size or degree of non-conformity of the existing structure (pre-Coastal Act), including through increased intensity of development with a non-conforming setback. Acknowledge that additions to existing structures should be considered new development that must conform to</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>

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the standards for new development including but not limited to avoiding future protective devices. Consider limitations on the size of additions unless non-conforming portions of the structure are removed.	
<b><i>Sea Level Rise Redevelopment, Repair, and Retrofit Policies</i></b>	
<u>7-92. Redevelopment in At-Risk Locations.</u> Prohibit expansions, additions, or substantial renovations of existing structures in danger from erosion hazards, including as may be exacerbated by sea level rise. Require removal of non-conforming portions of the existing structure unless such removal would be detrimental to site stability or natural resources, when a remodel or renovation meeting the threshold for redevelopment is proposed.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-93. New or Replacement Foundations.</u> Limit new or replacement foundations or substantial improvements, other than repair and maintenance, to the existing foundation when located seaward of the appropriate bluff setback for assuring site stability for at least 100 years. Approve significant new foundation work only when it is located inland of the setback line for new development and when it will not interfere with coastal processes in the future.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-94. Redevelopment Standards.</u> Require that renovations meeting the threshold for redevelopment should not be approved unless the entire structure meets the standards for new development, including but not limited to a waiver of right to shoreline protection and current setback requirements. Specify that if any existing non-conforming elements are permitted to remain when a renovation is under the threshold for redevelopment, those non-conforming elements are not subject to rights to protection pursuant to Coastal Act Section 30235.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<u>7-95. Repair and Retrofit of Existing Structures.</u> In instances where relocation is not an option, repair damage and/or retrofit existing structures to better withstand sea level rise impacts through measures such as using stronger materials, elevating bridges or sections of roadways, and building larger or additional drainage systems to address flooding and erosion sedimentation concerns.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<b><i>Managed Retreat, Relocation, and Removal Policies</i></b>	
<u>7-96. Managed Retreat.</u> Require new development that is subject to wave action, erosion, or other hazards to be removed or relocated if it becomes threatened in the future by coastal hazards, including as may be exacerbated by sea level rise.	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<p><u>7-97. Options for Removal.</u> For new development in high hazard areas or resource-constrained areas where managed retreat might be an appropriate option at some time in the future, ensure that foundation designs or other aspects of the development will not preclude future incremental relocation or managed retreat. Alternative design options should be considered and employed if site conditions allow.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-98. Foundations and Basements.</u> Limit the use of foundations, caissons or basements that can interfere with shoreline erosion or become exposed over time. In locations where foundation or building elements, such as deepened perimeter foundations, caissons or basements may be exposed to wave action through rising sea level or erosion, require analysis of less extensive foundation or building options. If no less damaging foundation alternatives are possible, require that the foundation, caisson or basement design allows for, and require future incremental or complete removal as the foundation elements become exposed to avoid future impacts to coastal bluffs and beaches.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-99. Incremental Removal.</u> When a lot is not large enough to accommodate development that avoids coastal hazards for the expected life of the development, develop a project option that minimizes hazards from the identified sea level rise scenarios for as long as possible, and then requires incremental retreat once certain triggers are met. Triggers for relocation or removal of the structure would be determined by changing site conditions such as when erosion is within a certain distance of the foundation; when monthly high tides are within a certain distance of the finished floor elevation; when building officials prohibit occupancy; when essential services to the site can no longer feasibly be maintained (e.g. utilities, roads); or when the wetland buffer area decreases to a certain width. It will be the property owner’s responsibility to remove the structure(s) and restore the site such that the public trust and coastal resources are protected.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-100. Foundation and Structure Removal.</u> If no less damaging foundation alternatives are possible, ensure that foundation design allows for incremental removal as foundation elements become exposed, and develop pre-established triggers for incremental or complete removal that will avoid future resource impacts.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment
<p><u>7-101. Rolling Easements.</u> Establish a program of rolling easements to allow coastal lands and habitats, including beaches and wetlands, to migrate landward over time as the mean high tide line and public trust boundary moves inland with sea level rise.</p>	2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<p><u>7-102. Relocation Incentives.</u>            Provide incentives to relocate development out of hazardous areas. Consider creating a relocation fund through increased development fees, in lieu fees, or other funding mechanisms.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-103. Acquisition and Buyout Programs.</u>            Establish an acquisition plan or buyout program to acquire property at risk from flooding or other hazards. Acquisition includes the acquiring of land from the individual landowner(s). Structures may be demolished or relocated, the property is restored, and future development on the land is restricted.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<b><i>Public Facilities and Infrastructure Policies</i></b>	
<p><u>7-104. Infrastructure and Public Facilities.</u>            Site and design infrastructure and public facilities, including roads, trails, and parks, with consideration for sea level rise impacts that may occur over the economic life of the structure (at least 100 years). Ensure that the connectivity of infrastructure is preserved in the event of ongoing erosion or wave run-up, and ensure adequate egress/evacuation is preserved during storm events. Consider sea level rise in the siting and design of any new Coastal Trail improvements and consider planned retreat or other adaptive measures for new and existing Coastal Trail areas at risk of erosion, flooding or wave run-up. In cases where facilities cannot be sustainably maintained, removal or abandonment of infrastructure should be evaluated, and the least environmentally damaging approach shall be implemented.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>
<p><u>7-105. Critical Facilities.</u>            Identify critical facilities that are vulnerable to sea level rise hazards, such as the Sewer Authority Mid-Coastside Wastewater Treatment Plant, and establish measures that ensure continued function of critical infrastructure, or the basic facilities, service, networks, and systems needed for the functioning of a community, including:</p> <ol style="list-style-type: none"> <li>a. Developing strategies for the managed retreat (retiring, moving, or replacing) of infrastructure and public facilities at risk of damage from sea level rise impacts that may occur over the economic life of the structure (at least 150 years for critical facilities);</li> <li>b. Ensuring functional continuity of the critical services provided by infrastructure at risk from sea level rise and extreme storms; and</li> <li>c. Providing for the use of protective devices if necessary to ensure the continuation of needed services.</li> </ol>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>

<b>LUP Update – 2018 Public Draft</b>	<b>Origin</b>
<p><u>7-106. Planning for Extreme Conditions.</u> Ensure that critical facilities are designed to function even if the highest projected amounts of sea level rise occur and that sites with hazardous materials are protected from extreme sea level rise impacts. Require proposals and/or expansion plans to address sea level rise for coastal dependent infrastructure that must necessarily be sited in potentially hazardous areas, such as industrial, energy, and port facilities. Such facilities should be designed to withstand future extreme impacts while minimizing risks to other coastal resources through initial siting, design, and/or inclusion of features that will allow for future adaptation, including protective devices if necessary.</p>	<p>2016 First Public Draft Policy, Sea Level Rise Vulnerability Assessment</p>