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Coastal Hazards and Sea Level Rise Implementation Plan

Notes: *Highlighted policy references indicate which policy is implemented (this is a temporary tracking convention). May consider adding this as a new "Coastal Hazards" section to the existing IP after Habitat Protection section or (and probably preferred) add a header in the Existing IP referencing this as a standalone document. Language in the City's current IP regarding protective structures (i.e., page 3 on) will need to be deleted.*

COASTAL HAZARDS AND SEA LEVEL RISE

Purpose

In order to protect and preserve Marina's natural coastline and valued coastal resources, to ensure public safety and welfare from coastal hazards, to maintain consistency with the LCP's Land Use Plan (LUP), and to ensure no shoreline protective devices are utilized in the future, development shall conform to all applicable Land Use Plan Coastal Hazards and Sea Level Rise policies and the following requirements. (HAZ-1)

Coastal Hazard Evaluation Updates

A. The City shall review the existing coastal hazards sea level rise vulnerability assessment at least every ten years after certification of the LCP (and in response to significant storm events resulting in erosion). The evaluation shall summarize the current state of the science on the potential rates and effects of sea level rise and coastal hazards on Marina's shoreline, including a review of the Monterey tide gage, changes in topography, erosion rates following cessation of the CEMEX sand mine and any more recent coastal hazard modeling that may identify vulnerable areas, structures, facilities, and resources, with a focus on sensitive coastal resource areas. The review evaluation will result in a determination as to whether there is a need to modify policies or implementation in order to better address the impacts of sea level rise and other coastal hazards, particularly those related to coastal erosion. It will also identify current status of measurable triggers such as the distance of the dune crest to existing development. Updates to the LCP, including through any vulnerability assessment, shall use the best available science for estimates of expected sea level rise and potential resultant impacts. This evaluation should consider new data, models and information but should determine the best available science based on expertise HAZ-2.

Regional Considerations

A. Within two years of certification of the Coastal Hazards and Sea Level Rise update of the LCP, the Marina Fire Department shall update the *City of Marina Tsunami Incident Response Plan* to clearly identify a warning system and procedures for protection of life and property in coastal areas that are subject to storm and tsunami hazard, including means of informing visitors to the shoreline and oceanfront hotels of the potential danger of large waves and evacuation routes. (HAZ-3)

B. The City shall work with the Marina Coast Water District to identify appropriate adaptation strategies to avoid dune erosion hazards and support their efforts to pursue options for removal of the Marina Coast Water District's former wastewater treatment plant and restoration of the site. (HAZ-8)

C. The City shall work with State Parks to consider and pursue options such as, grants or recreation bond measures, update of the *Marina State Beach Master Plan* and to relocate the existing State Parks parking and restroom structures and infrastructure at the present location to a site outside of the projected erosion hazard zones, consistent with LUP requirements. (HAZ-9)

D. Planned and existing shoreline access points must be sited, designed, maintained, and relocated as necessary to minimize impacts to dune vegetation from human impacts, runoff, and wind erosion and avoid contributing to dune erosion. (HAZ-10)

Development Considerations

A. Existing or new development in areas subject to tsunami hazards shall prepare a tsunami preparedness plan that describes evacuation procedures, evacuation route signage, and other protocols for addressing a potential tsunami event. Within one year of certification of the Coastal Hazards and Sea Level Rise update of the LCP, the City shall adopt an ordinance or resolution requiring existing development to prepare such a plan. (HAZ-3)

B. Development in shall be sited and designed to minimize risks to life and property and assure stability and structural integrity over the life of the development. (HAZ-4)

C. Development shall not create or contribute significantly to erosion, geologic instability, substantially alters natural landforms, or adversely alters local shoreline sand supply. Adverse alterations to sand supply may include, but are not limited to, accelerated erosion, loss of sand beach area through physical encroachment, obstruction of new beach formation in areas where the bluff/shoreline would have otherwise naturally eroded, or increased the loss of sand-generating bluff/shoreline sediments that would have entered the sand supply system absent the development. (HAZ-5)

D. Shoreline protective devices are prohibited in the Marina coastal zone. (HAZ-6)

E. As a condition of approval for the issuance of all Coastal Development Permits for any development that at some point during its lifetime may be subject to coastal hazards, the Applicant shall record a deed restriction against the properties involved in the application that acknowledges the property and development may be subject to coastal hazards, that access to the development may be affected, that shoreline protective devices are prohibited to protect such property and development, and that waives any right that may exist to construct such shoreline protective devices. Property owners in the future facing coastal erosion agree to remove threatened development and restore affected areas, if necessary, subject to the requirements to prepare a removal and restoration plan. This, or similar language, should be included in a waiver and as conditions of approval, including waiving any responsibility of the City to maintain any property, access, or structures at risk to coastal hazards.(HAZ-6)

F. New development will assume all risk and liabilities related to coastal hazards and acknowledge that the City will not guarantee future access and infrastructure to hazard impacted areas as identified on Figure 1 of the LCP Land Use Plan. (HAZ-7, #4)

G. Repair and maintenance, renovations, activities and safety improvements that do not result in an addition to, or enlargement or expansion of, the object of such repair or maintenance activities shall not require a coastal development permit with the exception of those classes of repair and maintenance that involve a risk of a significant adverse environmental impact as identified in 17.43.070 Exemptions (D).

H. Any existing structures that are substantially destroyed by fire, earthquake, tsunami or other natural disaster may be reconstructed substantially as it was prior to such destruction as identified in 17.43.070 Exemptions (G) subject to current building standards and including 50 year erosion setbacks.

Applications for All Development Potentially Subject to Coastal Hazards

The following shall be required for any application for development within the City of Marina Coastal Zone:

A. **Initial Coastal Hazards Assessment.** The applicant shall request an initial site assessment screening from the City, so that City staff may determine whether the site may be subject to coastal hazards over its lifetime (generally over at least the next 50 years).

   The screening shall include a review of CDPs issued, or applied for, at the subject site and immediate vicinity; and be based on all readily available information and the best available science including technical reports, resource maps, aerial

photographs, site inspections, and the coastal hazard map in the City's LCP Land Use Plan (Figure 1, Coastal Hazards with Areas of Sea Level Rise). Maps can be used as a resource for identification of coastal hazard areas; however, absence of mapping cannot alone be considered absence of hazards, and local site conditions must be examined at the time of coastal permit application using the best available science and topography. (HAZ-7)

B. **Coastal Hazards Report.** Where the initial site assessment reveals that the proposed development is mapped within the City's LCP Land Use Plan Figure 1(Coastal Hazards with Areas of Sea Level Rise), and/or otherwise may be subject to coastal hazards over the next 50 years, a site specific Coastal Hazards Report (Report) shall be prepared. The Report shall at a minimum provide for the following:

1. **Report Purpose.** The Report shall be prepared by a qualified geologist/engineer/geomorphologist to ensure that such development can be built and maintained in a manner consistent with the City's coastal hazards policies and with the greatest protection of coastal resources for the life of the development, including no future construction of shoreline protective devices. (HAZ-7, #3)

   The Report shall use the best available science to identify the potential impacts of erosion, episodic and long-term shoreline retreat and coastal erosion, flooding, storm waves, tsunami, landslides, bluff and geologic instability, and the interaction of same, and all as impacted by sea level rise over the life of the development. The information gathered should address multiple future time horizons (e.g., 2050, 2100) or multiple sea level rise elevation scenarios, as appropriate and feasible. The Report shall recommend any mitigation measures or modifications to the project that are needed to ensure that the project is consistent with all applicable Land Use Plan Coastal Hazards and Sea Level Rise policies. (HAZ-2)

2. **Report Content**. The Report shall, at a minimum, contain the following sections:

   a. Summary

   b. Geology of the Project Area

   c. Wave, Tide, and Current Trends of Sea Level Rise

   d. Erosion Trends and Storm Impacts in and around the Project Area

   e. Seasonal Beach Profiles and Trends

   f. Existing and Future Projections of impacts from Coastal Hazards on the Proposed Project

g. Potential Adaptation or mitigation Strategies to Avoid Coastal Hazard Impacts

h. Description of Strategies that Have Been Identified and Prioritized to Avoid or Minimize Coastal Hazard Impacts

i. Secondary Adaptation Impacts (discussion of any potential secondary or adjacent impacts of adaptation strategies on ESHA, adjacent properties or coastal resources)

j. Conclusions and Recommendations

k. Coordination with Other Agencies, Groups, or Consultants

l. Report Preparer's Qualifications

k. References

3. **Coastal Hazards Analysis.** The Report shall at a minimum document the following addressing existing conditions, near-term (3 to 5 years) conditions, and future time horizons (e.g., 2050, 2100) or multiple sea level rise elevation scenarios based on the latest State Guidance (currently CCC and OPC 2018 (HAZ-2)

a. Regional and local geologic setting, including topography, geomorphology, natural landforms, soil/rock types, thickness of soil or depth to bedrock, and other relevant properties such as erosion potential.

b. Information about potential coastal hazards at the site, including normal and maximum tide elevations, wave conditions (including maximum expected wave height, storm surge and frequency/magnitude of wave/tidal surge), total water level elevation (including storm wave runup from a 100-year event during an El Niño and spring high tide, and potential erosion that could occur from long term sea level rise and extreme storm related erosion).

c. Long-term average annual erosion rates.

d. Recession of the dune crest associated with a one percent annual chance total water level and associated episodic or rapid erosion, based on recent observations from the project site or nearby areas of comparable geology.

e. Alterations to landforms, or local shoreline sand supply caused by the development. (HAZ-5)

f. Ground and surface water conditions and variations, including hydrologic changes caused by the development (e.g., introduction of sewage effluent and irrigation water to the groundwater system, and alterations in surface drainage) as well as potential changes to extent and duration of elevated groundwater daylighting.

g. Existing conditions, expectations for the near-term (three to five years) changes to the site, considering current erosion rates and related conditions (including wave and storm conditions), changes to the erosion and geomorphology from the cessation of the CEMEX sand mining, and projections of longer term changes from sea level rise.

h. Effect of the proposed development (including siting and design of structures, septic system, landscaping, drainage, and grading) and impacts of construction activity on the stability of the site and the adjacent area.

4. **Mitigation of Coastal Hazards Analysis.** The Report shall include a detailed analysis of strategies incorporated into the project, and any feasible alternative options, to avoid identified erosion/site stability hazards and ESHA. Strategies include, but are not limited to, consideration of additional building heights to reduce footprint, consistent with LCP visual resource and ESHA policies, and construction of suitable foundations that allow for structures to be relocated (HAZ-7, #1). At a minimum the analysis shall include the following:

   a. Evaluation of alternatives, that avoid hazards for proposed development, and/or relocation of any threatened structures; technical feasibility and an estimate of expected costs to be borne by the property owner to relocate; partial removal of threatened elements, with a clear analysis and estimate of how this would be accomplished; and site drainage controls and native plant revegetation.

   b. A combination of different proposed development alternatives should be considered to avoid identified erosion/site stability hazards when appropriate(e.g. use of erosion resistant vegetation, surface water controls, periodic sand nourishment, or the use of incremental adaptation responses tied to identified triggers, such as erosion measures or specific storm event impact).

   c. Identification of potential mitigation measures to address identified coastal resource impacts in each case.