CITY OF MARINA LOCAL COASTAL PROGRAM

COASTAL HAZARDS AND SEA LEVEL RISE

IMPLEMENTATION PLAN

September 19, 2023

PUBLIC DRAFT

Prepared by

EMC Planning Group Inc.

CITY OF MARINA LOCAL COASTAL PROGRAM IMPLEMENTATION PLAN

COASTAL HAZARDS AND SEA LEVEL RISE

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Coastal Hazards and Sea Level Rise Implementation Plan

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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, with the exception of coastal-dependent uses (HAZ-6), development shall conform to all applicable Land Use Plan Coastal Hazards and Sea Level Rise policies and the following requirements (HAZ-1):

I. 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. 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 gauge, 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, including those identified in Appendix 1, 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)

II. Regional Considerations

A. Within two years of certification of the Coastal Hazards and Sea Level Rise update of the LCP, the City of Marina 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 hazards, 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 strategies to avoid dune erosion hazards and support their efforts to pursue options for repurposing the Marina Coast Water District's former wastewater treatment plant. Strategies should include the following:

    1. Reliance on shoreline protective devices shall only be allowed if hazard avoidance or nature-based solutions are not feasible. (HAZ-7)

    2. Nature-based adaptation strategies, including beach nourishment, living shorelines, cobble berms, and driftwood dune enhancement shall be considered in response to erosion events. (HAZ-15)

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 hazard avoidance 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)

E. The City shall consider updating land use designations and zoning maps to plan for managed retreat. (HAZ-16)

F. Beach nourishment is encouraged using sand from the Monterey Bay Opportunistic Beach Nourishment program in areas identified as erosion hotspots. (HAZ-15)

G. The City of Marina shall identify a number of receiver sites to participate and complete an environmental review document to participate in the Monterey Bay Opportunistic Beach Nourishment Program. (HAZ-15)

H. The concepts of a rolling or ambulatory easement(s) and movable boardwalks which adapt to sea level rise and coastal erosion will be explored and incorporated, where feasible, into a Coastal Trail system in Marina. (HAZ-14)

I. Future public works projects shall prioritize enhancing coastal trail connections and walkability from neighborhoods to Coastal Access points, with an emphasis on providing Coastal Access to disadvantaged communities. (HAZ 11)

III. 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 five years 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 shall be sited and designed to avoid hazards, 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 alter natural landforms, negatively impact the surf ecosystem or adversely alter 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 increase the loss of sand-generating bluff/shoreline sediments that would have entered the sand supply system absent the development. In cases where local shoreline sand supply is adversely affected from development, mitigation for beach loss is required, including possible payment of in lieu fees. (HAZ-5)

D. If a shoreline protective device is required to protect coastal-dependent development, a deed restriction shall be added as a condition of approval that requires the property owner to maintain the shoreline protective device and remove the structure should it fail. (HAZ 6)

E. Development which is located in an area subject to Coastal Hazards should prepare a Coastal Hazards Response Plan to: (HAZ-18)

    1. Identify preferred alternatives to avoid coastal hazards; and

    2. Identify triggers for relocation.

F. Shoreline protective devices are prohibited in the Marina coastal zone, unless required to protect coastal-dependent uses with no other feasible alternatives. (HAZ-6)

G. 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, and that waives any right that may exist to construct such shoreline protective devices, unless such development is considered coastal-dependent development and no other adaptation strategies are feasible. It shall also

acknowledge that the boundary between public land (tidelands) and private land may shift with rising seas, that the Coastal Development Permit approval does not permit encroachment onto public trust land, that any future encroachment must be removed unless the Coastal Commission determines that the encroachment is legally permissible pursuant to the Coastal Act and authorizes it to remain, and that any future encroachment would also be subject to the State Lands Commission's (or other trustee agency's) leasing approval. 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, shall 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-8)

H. 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 in the Coastal Hazard Dune Erosion area (Figure 1-1 of the LUP*).* (HAZ-8)

I. 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 Marina Municipal Code Section 17.43.070 Exemptions (D).

J. 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 Marina Municipal Code Section 17.43.070 Exemptions (G) subject to current building standards and including 75-year erosion setbacks that consider sea level rise.

IV. 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 Hazard Dune Erosion area, as identified in Figure 1-1 of the LUP:

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 75 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 presence in the Coastal Hazard Dune Erosion area (*Figure 1-1 of the LUP*). 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.

If such development is not mapped within the Coastal Hazards Dune Erosion Area (Figure 1-1 of the LUP) and is not identified as being subject to coastal hazards over its lifetime (the next 75 years) then no Coastal Hazards Report is required. (HAZ-8)

B. **Coastal Hazards Report**. Where the initial site assessment reveals that the proposed development is within the Coastal Hazard Dune Erosion area (Figure 1-1 of the LUP), and/or otherwise may be subject to coastal hazards over the next 75 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-8)

   The Report shall use the best available science to identify the potential impacts of erosion, episodic and long-term shoreline retreat and coastal erosion, groundwater rise, 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) that span the expected life of the development 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; and,

m. References.

3. **Coastal Hazards Analysis.** The Report shall, at a minimum, address existing conditions, near-term (3 to 5 years) conditions, and future time horizons (e.g., 2050, 2100) spanning the expected life of the development 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 (five (5) 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-8)

   At 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.

V. Shoreline Monitoring

A. The City of Marina shall monitor the following areas along it's shoreline to determine whether adaptation triggers have been met. (HAZ 13)

   1. **State Parks parking lot and restrooms.** Erosion of dune crest to within 5 feet of the parking lot.

2. **Marina Coast Water District.** Erosion of dune crest to within 10 feet of the MCWD office buildings.

3. **Sanctuary Beach Resort.** Erosion of the dune crest within 25 feet of the first row of ocean-facing buildings at the Sanctuary Beach Resort.

4. **Water supply infrastructure.** Exposure of any portion of any water supply infrastructure for more than 4 weeks.

B. Monitoring shall occur once per year or following any major erosion event consisting of a storm wave event greater than 10% annual chance storm (10- year wave event). (HAZ 13)

C. Once the identified triggers have been met, adaptation planning should begin before projected damages are realized. (HAZ 18)

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