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To: Planning Directors of Coastal Cities and Counties

From: Dr. Kate Huckelbridge, Executive Director, California Coastal Commission

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RE: Local Coastal Program Policies on Nature-Based Adaptation Strategies

Introduction

Nature-based adaptation strategies refer to a method of coastal adaptation that incorporates ecological principles into shore protection strategies to support multiple benefits, including hazard adaptation and mitigation, natural resource resilience and enhancement, and recreation and scenic resource preservation. As discussed in the Nature-Based Adaptation Strategies Memo published in 2021, nature-based adaptation strategies can include a wide variety of strategies that range from softer solutions, such as wetland restoration, to hybrid armoring approaches that incorporate a harder component that typically fixes the shoreline. Local jurisdictions are encouraged to prioritize and implement nature-based adaptation strategies whenever feasible, including through the development of Local Coastal Program (LCP) policies. Developing policies relating to nature-based adaptation strategies is an important step for local jurisdictions to highlight and prioritize these projects. Because the nature, location, and method of the nature-based adaptation strategy can vary widely based on the geomorphology and development types between jurisdictions, LCP policies should be tailored to fit the needs of a specific area or neighborhood. Moreover, LCP policies on nature-based adaptation strategies can cover a broader range of topics such as prioritizing softer solutions over hard shoreline armoring, feasibility studies and pilot projects for nature-based adaptation strategies, and regional and neighborhood-scale adaptation approaches. Finally, including policies on nature-based adaptation strategies in LCP updates can address short- and mid-term sea level rise adaptation needs while a jurisdiction continues to evaluate and plan for coastal resilience in the long-term.

This memo provides an overview of the strengths of certified LCP policies on nature-based adaptation strategies as well as best practices to develop policies that prioritize and encourage the use of nature-based adaptation strategies.[1] Appendix A provides a list of certified LCP policies relating to nature-based adaptation strategies.

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Strengths of Certified LCP Policies

LCP Policies that Require Prioritization of Nature-Based Adaptation Strategies

Many of the example LCP policies in Appendix A prioritize softer nature-based adaptation strategies over hard armoring when feasible and where these strategies are the least environmentally damaging alternative. This approach has generally been found consistent with the Coastal Act in the Commission's prior actions.[2]

Coastal Act Section 30235 states that hard shoreline protective devices, such as revetments, seawalls, and cliff retaining walls, and other such construction that alters natural shoreline processes "shall be permitted *when required* to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and *when designed to eliminate or mitigate adverse impacts on local shoreline sand supply*" (emphasis added). The Commission has interpreted "when required" to mean that shoreline armoring shall only be permitted under this section if it is the only feasible and the least environmentally damaging alternative capable of protecting the endangered structures or uses, and it meets the other requirements of Section 30235.[3] If shoreline armoring is the only feasible alternative, the Commission has found in prior actions that Section 30235 requires that the chosen structural design of the shoreline protective device be the least environmentally damaging option, including being the minimum necessary to protect the endangered existing structure, or coastal-dependent or public beach use. This section of the Coastal Act thus minimizes the allowance of harder shoreline protection devices, which can have a variety of negative impacts on coastal resources including adverse effects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, which may ultimately result in the loss of beach. Nature-based adaptation strategies that incorporate softer elements and that also intend to protect or restore habitat may in some cases be the least environmentally damaging feasible alternative and thus should be encouraged when appropriate.[4] Nature-based adaptation strategies that consist of hybrid armoring may have more adverse impacts on sand supply and other resources than those that entirely rely on softer elements, and may not always be the least environmentally damaging alternative. LCP policies that encourage using nature-based adaptation strategies may prioritize

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[2] Other coastal states also prioritize nature-based adaptation strategies and softer solutions over harder shoreline armoring in recognition of the greater impacts that harder solutions often have on sand supply and ecosystems. For example, Maryland's Living Shoreline Protection Act requires the use of "nonstructural shoreline stabilization measures" in tidal wetlands un
less infeasible, with very limited exceptions. (Maryland Living Shorelines Act, Ch. 304. (2008); Code of Maryland Regulations §§ 26.24.04.01.(C), (E)). The Massachusetts Wetlands Protection Act prohibits any new bulkhead, revetment, seawall, groin or other coastal engineering structure on a sediment-source coastal bank except when no method of protecting the building other than the proposed coastal engineering structure is feasible and other criteria are met. (Massachusetts Wetlands Protection Act, Massachusetts General Laws, Title XIX, Ch. 131 § 40; 310 Code of Massachusetts Regulations § 10.30(3)).

[3] See, e.g., Pillar Point Harbor's West Trail (App. No. 2-20-0443, 2021); Cardiff State Beach Living Shoreline Project (6-17-0596, 2017).

[4] See, for example, Pillar Point Harbor's West Trail (App. No. 2-20-0443, 2021).

the use of soft strategies, which is generally consistent with the goals of Section 30235 and the coastal resource protection policies of the Coastal Act.

LCP policies that prioritize softer nature-based adaptation strategies that mitigate the adverse effects of sea level rise over hard armoring may also be consistent with and further the goals of Coastal Act Section 30270. Section 30270 requires the Commission to take into account the effects of sea level rise in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise. As discussed above, in some places, nature-based adaptation strategies can help to avoid or mitigate the adverse effects of sea level rise by protecting both communities and ecosystems as sea levels rise. Accordingly, generally prioritizing these strategies over hard armoring may avoid and mitigate the adverse effects of sea level rise consistent with Section 30270.

The section below identifies three main components of certified LCP policies that are critical to prioritizing nature-based adaptation strategies.

- **Generally prohibiting hard armoring.** Softer nature-based adaptation strategies often have fewer adverse impacts on coastal resources than harder protective strategies when appropriately designed. Thus, prohibiting hard armoring except in cases where no other alternative strategies are feasible will lead to prioritization, analysis, and implementation of nature-based adaptation strategies as less environmentally damaging alternatives. For example, the City of Morro Bay LUP policy below prohibits the use of hard shoreline protective devices except in cases in which no other feasible alternatives exist, instead directing applicants to consider non-structural or softer solutions, hybrid armoring, or other actions such as retreat or accommodation methods.

  City of Morro Bay LUP *(2021), Policy PS-3.3.*
  New Shoreline Protective Devices. New shoreline protective device development (including replacement, augmentation, addition, and expansion associated with an existing device) ... shall only be utilized if no other feasible, less environmentally damaging alternative, including removal or relocation away from such hazards, beach nourishment, nonstructural drainage and native landscape improvements, or other similar nonstructural options can be used to address erosion hazards. Such nonstructural options shall be used and prioritized wherever possible to protect coastal resources, including coastal habitats, public recreational uses, and public access to the coast. … Where such nonstructural options are not feasible in whole or in part, soft structural alternatives (sand bags, vegetation, etc.) shall be used and prioritized wherever possible before more significant shoreline protective devices are considered.

- **Requiring the use of nature-based adaptation strategies as a preferred option.** The mandatory language of the City of Santa Barbara LUP policy below requires that avoidance, nonstructural solutions, or other softer solutions “shall first” or “shall be implemented” where feasible. This language makes clear that these types of softer solutions with fewer impacts must be prioritized over hard shoreline protective devices when feasible and appropriate. As a best practice, LCP policies should generally use language that clearly

prioritizes avoidance of hazards through siting or other design options, as well as the use of softer nature-based adaptation strategies and nonstructural solutions, over reliance on hard armoring.

City of Santa Barbara LUP ***(2019), Policy 5.1-43.***
Shoreline Hazards Avoidance Preferred. *Protection of development at risk from shoreline hazards shall first avoid the hazards, including through demolition, relocation, siting of structures, as well as drainage control and installation of drought-tolerant landscaping. If avoidance is not feasible, other techniques that minimize hazards and avoid use of shoreline protection devices, such as use of vegetative planting, dune creation, dune restoration, and beach nourishment, shall be implemented in conjunction with avoidance techniques, as feasible.*

- **Using language with clear standards.** The County of Los Angeles Santa Monica Mountains LUP policy below requires the use of soft structures and living shorelines "where feasible" over the use of harder structures. The Coastal Commission and local governments have long applied the concept of feasibility to projects relating to shoreline protection. As discussed above, the Commission has interpreted the language of Coastal Act Section 30235 that permits shoreline protective devices only "when required" to mean that shoreline armoring shall only be permitted under this section if it is the only feasible and least environmentally damaging alternative capable of protecting the endangered structures or uses. The term "feasible" is defined in Coastal Act Section 30108 as meaning "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." The term "feasible" is also defined in the Santa Monica Mountains LUP policy with the same definition as the Coastal Act, and thus has a clear standard that can be applied to different projects. As a best practice, LCP policies should use language that provides a clear or well understood standard.

  County of Los Angeles Santa Monica Mountains LUP ***(2018), Policy CO-195.***
  Where feasible, require the use of soft structures and living shorelines if shore protection is needed. Prohibit shoreline structures, including piers, groins, revetments, breakwaters, drainages, seawalls, pipelines, and other such construction that alters natural shoreline processes, except where there is no less-environmentally-damaging alternative for the protection of coastal-dependent uses, existing development, or public beaches in danger from erosion. Any such structures shall be sited to avoid sensitive resources and designed to eliminate or mitigate adverse impacts on local shoreline sand supply….

  Glossary. *FEASIBLE - Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.*

LCP Policies Implementing Nature-Based Adaptation Strategies

Some LCPs incorporate specific nature-based adaptation strategies or make commitments to develop the information necessary to develop such a strategy. The City of Manhattan Beach LUP policies below, for example, commit the City to developing and implementing a beach dune restoration program and evaluating other nature-based adaptation strategies. Importantly, these policies require implementation of a specific nature-based adaptation strategy as a citywide program. Incorporating specific nature-based adaptation strategies into the LCP ensures that these strategies will be part of a jurisdiction's plan for adaptation to sea level rise. Such policies can also inform phased adaptation and allow local governments to better develop monitoring and maintenance requirements that ensure project goals are met. LCP policies incorporating nature-based adaptation strategies should consider how other LCP policies and future development may impact implementation of these strategies. For example, the City of Manhattan Beach LUP requires other development to accommodate future nature-based adaptation strategies by planning for inland migration and/or replacement of habitat and by requiring setbacks to allow for dune maintenance and restoration.

> **City of Manhattan Beach LUP *(2023)*[5]**
> ***Policy IV.A.2****: Develop and implement a citywide beach dune restoration program and evaluate softer solutions such as living shoreline projects. The continued viability of dune and other coastal habitats shall be provided for by planning for inland migration and/or replacement of habitats lost to sea level rise.*
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> ***Policy IV.A.3****: Stabilize dunes and back beach with the installation and maintenance of drought-tolerant native southern California coastal dune plant species capable of enhancing dune stability and the removal of non-native vegetation. Development shall be set back from dunes through buffers of sufficient width and design to protect native costal vegetation from impacts of adjacent uses, including a bike path set back of a minimum of three feet and a beach grooming set back of a minimum of five feet.*

As best practices, LCP policies requiring the development or implementation of nature-based adaptation strategies should consider how future development may impact these strategies, ensure integration and consistency with other LCP policies, and plan to accommodate nature-based adaptation strategies over time.

LCP Policies on Sediment Management Programs

A number of jurisdictions have LCP policies relating to sediment management programs, including programs that call for the beneficial reuse of sediment and the restoration or maintenance of beach widths. For example, the City of Santa Barbara LUP includes a policy that calls for continuation of a dredged sediment management program that could lessen the need for shoreline protective devices. The City of Newport Beach LUP includes a policy on the development

[5] The City of Manhattan Beach LUP was approved by the Commission with suggested modifications on August 9, 2023. The City's LUP incorporating the suggested modifications has not yet been certified. At the hearing, the City stated that it was in agreement with the Commission's suggested modifications.

of a beach replenishment program that aims to maintain beach widths. Importantly, these policies note the use of sediment as a potential shore protection strategy over hard shoreline armoring. In some cases, sediment management programs that seek to maintain or widen beach spaces can help a jurisdiction prioritize and implement softer shore protection solutions. Further, including an LCP policy on sediment management that also includes monitoring requirements can help some jurisdictions gather data that could help inform future adaptation options, including other potential nature-based adaptation strategies. Local jurisdictions are encouraged to prioritize sediment management programs as they relate to nature-based adaptation strategies. For example, these programs should consider not only the protection benefits that a wide beach area may provide, but also how sandy beaches may present opportunities to restore or create habitats and improve ecological functions. These programs should prioritize how restoration or maintenance of sandy beach areas can be implemented in a way that complements restoration or preservation of ecological values. Additionally, local jurisdictions should consider how a broader program such as sediment management could allow more flexibility in sediment analysis and reuse (e.g., for wetland or dune restoration projects) over programs that more narrowly call for beach nourishment.

> **City of Santa Barbara LUP *(2019), Policy 5.1-11.***
> ***Sand Management**. Continue beach nourishment and dredged sediment management that protect shorelines from erosion and lessen the need for shoreline protection devices (e.g. seawalls), consistent with the policies of this Coastal LUP and subject to a valid Coastal Development Permit.*
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> **Newport Beach LUP *(2018), Policy 2.8.6-3.***
> *Develop and implement a comprehensive beach replenishment program to assist in maintaining beach width and elevations. Analyze monitoring data to determine nourishment priorities, and try to use nourishment as shore protection, in lieu of more permanent hard shoreline armoring options.*

Opportunities for Nature-Based Adaptation Strategy LCP Policy Development

The LCP policy examples in this memo and in Appendix A are meant to serve as a tool for local governments to develop LCP policies relating to nature-based adaptation strategies and should be adapted to fit the local jurisdiction's unique context, priorities, public input, geography, and other factors. Additionally, local governments should consider the following best practices and opportunities to further strengthen policies that prioritize or encourage nature-based adaptation strategies.

LCP Policy Language

As best practices, LCP policies regarding nature-based adaptation should generally:

- Prioritize softer nature-based adaptation strategies over harder shoreline protective devices when feasible and when they are the least environmentally damaging alternative.
- Use language that is clear and can be applied across different projects.

- Use consistent language. For example, if a policy uses the term "feasible" to describe when nature-based adaptation solutions must be used, this term should be used consistently whenever describing this concept instead of using it interchangeably with other language (e.g., "whenever possible").
- Ensure consistency with other LCP policies and make clear how different policies fit together. For example, if a policy requires new development to avoid hazards or use nature-based adaptation strategies whenever feasible, this requirement should also be reflected in policies governing when harder shoreline protective devices are allowed so that it is clear how these two mandates fit together.
- Consider defining relevant terms when the meaning of a term may be unclear.[6]
- Consider developing adaptation plans and feasibility studies that assess nature-based adaptation strategies that are then incorporated into the LCP.
- Consider including commitments to regional and cross-jurisdictional adaptation planning that involves nature-based adaptation strategies.

Regional and Neighborhood-Scale Adaptation

An important consideration in sea level rise adaptation planning is utilizing a regional or neighborhood-scale approach in protecting resources and development. This can include implementation of specifically identified adaptation strategies across areas with shared characteristics or assets as opposed to a parcel-by-parcel approach. Such an approach may provide better protection or leverage greater benefits for an identified area while also accounting for varying coastal habitats and public access areas that often span multiple parcels. Including nature-based adaptation strategy policies in LCPs could both support this broader level planning as well as prioritize the protection of coastal resources over a larger area, such as through a sand replenishment or dune restoration project. LCP policies relating to nature-based adaptation strategies can also help with identifying and implementing specific planning horizons and phased adaptation approaches for similar areas within a jurisdiction (*e.g.*, by identifying specific nature-based adaptation strategies that will be used as a near- to mid-term strategy before implementation of longer-term options), and creates an opportunity for regional scale coordination. Local governments should consider whether there are opportunities to develop NBAS policies that support regional and neighborhood-scale adaptation planning.

Developing Programs and Information for Project Implementation

There is no single approach to adapting to sea level rise or to using nature-based adaptation strategies. As discussed in Appendix F of the Critical Infrastructure at Risk Guidance and the Nature-Based Adaptation Strategies Memo, different types of soft and hybrid nature-based

[6] See the Glossary of the Commission's Sea Level Rise Guidance for example definitions of terms relevant to sea level rise adaptation, and Appendix F of the Commission's Critical Infrastructure At Risk Guidance for a discussion of terms relevant to nature-based adaptation strategies.

adaptation strategies may be appropriate for different types of hazards and settings, and may be used in conjunction with other strategies or as part of a phased adaptation approach. The Commission encourages local governments to develop the information necessary to understand where and what kind of nature-based adaptation strategies may be appropriate in their jurisdiction. Local governments could also develop policies that provide standards for nature-based adaptation strategies projects, like sediment management and monitoring and maintenance requirements. Local governments should consider conducting vulnerability assessments, adaptation planning, and feasibility studies to assess the feasibility, social, environmental, and economic aspects of using nature-based adaptation strategies and other alternatives over time.

The Coastal Commission's LCP Grant program has funding available for these types of technical studies and planning efforts that involve an LCP update. The Commission has awarded several grants for feasibility studies of nature-based adaptation strategies, including, for example:

- The City of San Clemente Round 7 LCP Grant, which includes a feasibility study focused on critical erosion hot spots and opportunities to develop nature-based pilot project(s) that provide multiple public benefits.
- The City of Santa Barbara Round 7 LCP Grant, which includes a 30-Year Waterfront Adaptation Plan that will analyze nature-based and hybrid adaptation options along the City's Waterfront intended to retain as much beach as possible while maintaining recreation uses.
- The City of Santa Cruz Round 5 and Round 7 grants, which include ongoing work to develop adaptation pathways focused on ensuring protection of the City's beach areas and access and recreation opportunities including through the use of nature-based and hybrid adaptation options.

The application for grants is available on the Commission's LCP Grants webpage, and local governments can email LCPGrantProgram@coastal.ca.gov with general inquiries. The Commission encourages local governments to apply for grant funding to complete this kind of work.

Conclusion

Incorporating policies on nature-based adaptation strategies into LCPs is an important step in prioritizing and implementing climate-resilient practices to address sea level rise. In many places, nature-based adaptation strategies can respond to, adjust to, and withstand changing coastal conditions while minimizing disruptions to communities and natural resources. The information above provides examples and best practices on how to develop LCP policies relating to nature-based adaptation strategies. However, the specific language of the policy may vary across jurisdictions, and local governments are encouraged to work with Coastal Commission staff to develop these policies.

Appendix A: LCP Policies Relating to Nature-Based Adaptation Strategies

Nature-Based Adaptation Strategies

Examples of Commission-certified LCPs that include policies on nature-based SLR adaptation strategies:

1. **City of Morro Bay LUP (2021)**

Policy PS-3.3: New Shoreline Protective Devices. New shoreline protective device development (including replacement, augmentation, addition, and expansion associated with an existing device) shall only be allowed where required to serve a coastal-dependent use or to protect existing structures (i.e., structures legally constructed prior to January 1, 1977, that have not been redeveloped since then) and coastal-dependent development in danger from erosion (i.e., when the development would be unsafe to use or occupy within two or three years). Such devices shall only be utilized if no other feasible, less environmentally damaging alternative, including removal or relocation away from such hazards, beach nourishment, nonstructural drainage and native landscape improvements, or other similar nonstructural options can be used to address erosion hazards. Such nonstructural options shall be used and prioritized wherever possible to protect coastal resources, including coastal habitats, public recreational uses, and public access to the coast.

Where such nonstructural options are not feasible in whole or in part, soft structural alternatives (sand bags, vegetation, etc.) shall be used and prioritized wherever possible before more significant shoreline protective devices are considered. Shoreline protective devices shall not be constructed to protect non-coastal-dependent development, development built on or after January 1, 1977 (including redeveloped structures), or where other measures/alternatives, including relocation, can adequately mitigate erosion hazards. All construction associated with shoreline protective devices and repair or maintenance or augmentation of existing protection devices shall be designed to eliminate or mitigate adverse impacts to coastal resources. The City shall only be involved financially with public shoreline protective devices.

2. **City of Half Moon Bay LUP (2021)**

Policy 7-32. Soft Protection Devices. Require development to use “soft” or “natural” solutions or “living shorelines” where feasible and 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.

3. **City of Pacific Grove LCP (2020)**

HAZ-14. New shoreline protective device development (including replacement, augmentation, addition and expansion associated with an existing device) shall only be allowed where

required to protect public recreational facilities (e.g., public parks trails, and paths), public infrastructure (e.g., public roads, sidewalks, and public utilities), and coastal dependent development (e.g., certain Hopkins Marine Station development) in imminent danger from erosion. Such devices shall only be utilized if no other feasible, less environmentally damaging alternative is available, such as relocation, beach nourishment, non-structural drainage and native landscape improvements, or other similar nonstructural options. Such non-structural options shall be used and prioritized wherever possible to protect coastal resources, including coastal habitats, public recreational uses, and public access to the coast.

Where such non-structural options are not feasible in whole or in part, soft structural alternatives (e.g., sand bags, vegetation, etc.) shall be used and prioritized wherever possible before more significant shoreline protective devices (including, but not limited to, seawalls, revetments, breakwaters, groins, bluff retention devices, and piers/caisson foundation systems). Shoreline protective devices shall not be constructed to protect noncoastal-dependent development, other than public recreational facilities and public infrastructure that do not otherwise constitute coastal-dependent development, or where other measures can adequately mitigate erosion hazards. All construction associated with shoreline protective devices and repair or maintenance or augmentation of existing protection devices shall be designed to eliminate or mitigate adverse impacts to the California Coastal National Monument and its geological, biological, cultural and visual resources.

4. **Long Beach SEASP (2020)**

Coastal Hazard Policy 6. For the Golden Sails Best Western Hotel site (Mixed-Use Marina Land Use Designation), proposal for redevelopment of this property will be required to create a shoreline management plan through the CDP process to account for future SLR and will be required to demonstrate that the development would be safe from hazards without shoreline protection. A shoreline management plan should include multiple potential adaptation measures which may include raising the pad elevations of future buildings careful building placement, avoidance strategies, and living shoreline natural dunes or berms to control flooding. Consistent with Section 6.7.o, Coastal Hazards, nature-based adaptation strategies are the preferred alternative for shoreline management. If the hotel is retained and experiences flooding due to SLR, then new or expanded hard infrastructure may be allowable consistent with Section 30235 of the Coastal Act, and all construction must comply with the provisions of Section 6.7.o, Coastal Hazards.

5. **City of Santa Barbara LUP (2019)**

Policy 5.1-43 Shoreline Hazards Avoidance Preferred. Protection of development at risk from shoreline hazards shall first avoid the hazards, including through demolition, relocation, siting of structures, as well as drainage control and installation of drought-tolerant landscaping. If avoidance is not feasible, other techniques that minimize hazards and avoid use of shoreline protection devices, such as use of vegetative planting, dune creation, dune restoration, and

beach nourishment, shall be implemented in conjunction with avoidance techniques, as feasible.

6. **County of Los Angeles Land Use Plan Amendment** for the Santa Monica Mountains Segment of the County's Coastal Zone **(2023)**
Policy CO-195. Where feasible, require the use of soft structures and living shorelines if shore protection is needed. Prohibit shoreline structures, including piers, groins, revetments, breakwaters, drainages, seawalls, pipelines, and other such construction that alters natural shoreline processes, except where there is no less-environmentally-damaging alternative for the protection of coastal-dependent uses, existing development, or public beaches in danger from erosion. Any such structures shall be sited to avoid sensitive resources and designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation or contributing to pollution problems and fish kills should be phased out or upgraded where technically feasible.

Sediment Management & Sea Level Rise

Examples of Commission-certified LCPs that include policies on sediment management and SLR:

1. **City of Manhattan Beach LUP (2023)**

Commission-approved suggested modifications to these policies have been included in the following text[1]:

Policy IV.A.2: Develop and implement a citywide beach dune restoration program and evaluate softer solutions such as living shoreline projects. The continued viability of dune and other coastal habitats shall be provided for by planning for inland migration and/or replacement of habitats lost to sea level rise.

Policy IV.A.3: Stabilize dunes and back beach with the installation and maintenance of drought-tolerant native southern California coastal dune plant species capable of enhancing dune stability and the removal of non-native vegetation. Development shall be set back from dunes through buffers of sufficient width and design to protect native costal vegetation from impacts of adjacent uses, including a bike path set back of a minimum of three feet and a beach grooming set back of a minimum of five feet.

Policy IV.A.4: The beneficial reuse and placement of sediments for sand nourishment projects should use beach-quality sand to enhance the use, safety, and appearance of the City's beaches when adverse impacts to the beach, intertidal, offshore resources, and surf are minimized and avoid significant disruption to marine and wildlife habitats and water circulation. Any beach nourishment project shall protect water quality and minimize and mitigate potential adverse

[1] The City of Manhattan Beach LUP was approved by the Commission with suggested modifications on August 9, 2023. The City's LUP incorporating the suggested modifications has not yet been certified. At the hearing, the City stated that it was in agreement with the Commission's suggested modifications.

biological and recreational resource impacts by considering the method, location, and timing of placement.

Policy IV.A.5: Participate in any Regional Sediment Management (RSM) programs for beach sand replenishment and retention. Participate in and encourage other long-term beach sand replenishment and retention programs at the federal, state, and regional level.

2. **City of Half Moon Bay LUP (2021)**

Policy 6-44. Sediment Restoration. Require that any restoration projects facilitate the delivery of clean, dredged sediment for areas where existing wetlands are or may become sediment-limited due to sea level rise.

Policy 7-43 *also calls for Shoreline Management Plans that include, among other things, an examination of local and regional annual erosion rates and natural and manmade sediment supplies in order to reflect current shoreline changes.*

3. **City of Santa Barbara LUP (2019)**

Santa Barbara's participation in regional sediment management is discussed in Section 5.1 Coastal Hazards.

Policy 5.1-11 Sand Management. Continue beach nourishment and dredged sediment management that protect shorelines from erosion and lessen the need for shoreline protection devices (e.g. seawalls), consistent with the policies of this Coastal LUP and subject to a valid Coastal Development Permit.

4. **City of San Clemente LUP (2018)**

HAZ-52 Sand Protection, Enhancement and Restoration. Support State and Regional initiatives that address the protection, enhancement, and restoration of sand on the City's coastal beaches because wide beaches provide critical protection against sea level rise, storm surges and tsunami run-up in addition to their public access, recreational, and ecological values.

5. **City of San Francisco LUP (2018)**

Policy 12.3 Develop and Implement a Beach Nourishment Program to Sustain Ocean Beach. Shoreline erosion has substantially narrowed the sandy beach south of Sloat Boulevard. Sea level rise will likely exacerbate the loss of sandy beach south of Sloat Boulevard and may extend this effect to the north towards the Cliff House. The City shall pursue the development and implementation of a long-term beach nourishment program to maintain a sandy beach along the western shoreline to preserve Ocean Beach as a public recreational resource for future generations and to protect existing public infrastructure and development from coastal hazards.

Implementation Measure:

Work with the U.S. Army Corps of Engineers to develop and implement a beach nourishment program involving the placement of sand dredged from the San Francisco bar navigation channel offshore of the Golden Gate onto Ocean Beach. Other sources of suitable sand for beach nourishment may also be identified and permitted. Sand shall not be removed from stable dunes.

6. **City of Newport Beach LUP (2018)**

2.8.6-1. Prepare and periodically update comprehensive studies of seasonal and long-term shoreline change, episodic and chronic bluff retreat, flooding, and local changes in sea levels, and other coastal hazard conditions.

2.8.6-2. Continue to monitor beach width and elevations and analyze monitoring data to establish approximate thresholds for when beach erosion or deflation will reach a point that it could expose the backshore development to flooding or damage from storm waves.

2.8.6-3. Develop and implement a comprehensive beach replenishment program to assist in maintaining beach width and elevations. Analyze monitoring data to determine nourishment priorities, and try to use nourishment as shore protection, in lieu of more permanent hard shoreline armoring options.