CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

August 15, 2013

Honorable Commission Members:

I am Charles Lester, Executive Director of the California Coastal Commission. I am pleased to be here today to provide input on behalf of the Coastal Commission on this very important topic. Last year marked the 40th anniversary of California's coastal management program. Our state's achievements protecting coastal resources, and providing for sound economic coastal development, are manifest in the incredible landscapes, diverse habitats, shoreline recreational resources, and vibrant coastal communities that are part and parcel of our $40 billion/year coastal economy.[1] But climate change poses great challenges to our coast, and it is critical that we respond to it with deliberate commitment and speed, so that our legacy of sound coastal management is not lost to the accelerating changes that we are already seeing.

I want to make five basic points to you today. I look forward to addressing the questions and discussion that may follow. First, it is well past the time that we recognize, and certainly the time that we should begin addressing in earnest, the reality of climate change. In the Commission's case, we have been concerned with global sea level rise related to climate change and the potential impacts to California's coast since at least 1989, when we produced our first report on the topic.[2] In 1992, the Coastal Act was amended to identify sea level rise as an important issue area for the Commission to better understand.[3] We have also been addressing coastal shoreline management challenges, such as coastal erosion and flooding hazards, since the inception of our program, and we have a great body of planning and regulatory experience to draw upon.

We must recognize, though, that these coastal hazard management challenges will be increasingly exacerbated and/or accelerated by the climate changes and rising sea levels that are now projected. On average, sea level has risen 8 inches along the California coast in the past century. But the NRC has recently projected that sea level will rise from between 1.4 and 5.5 feet south of Cape Mendocino and 0.3 and 4.7 feet north of the Cape, by 2100.[4] Rising seas, combined with larger storms will result in more coastal flooding, bluff erosion and failures, damage to coastal property and loss of public recreational beach resources. Infrastructure such as wastewater treatment plants along the coast, and Highway one, are vulnerable to inundation and catastrophic failure. Coastal wetlands and habitats will be lost if they cannot adapt to rising seas and changes in climate conditions. And it is well recognized that regardless of our reductions in greenhouse gases, many of

[1] National Ocean Economics Program (2005). Available: http://resources.ca.gov/press_documents/CA_Ocean_Econ_Report.pdf.
[2] Ewing, L.C., Michaels, J.M., McCarthy, R.J. (California Coastal Commission). (1989). Planning for an Accelerated Sea Level Rise Along the California Coast.
[3] Coastal Act Section 30006.5
[4] National Research Council (NRC), Committee on Sea Level Rise in California, Oregon, and Washington (2012) Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, National Academies Press, Washington, D.C. pp.250; ISBN 978-309-24494-3.

these changes are irrevocably loaded into the system, and cannot be avoided in our lifetimes and beyond.

We are already seeing the potential loss of public recreational beach resources in our urban areas, many of which are caught between increasingly armored lines of development and the rising tides. Unfortunately, these urban beach resources are also some of our most important, as they serve the great majority of our population. In short, if we don't begin to implement meaningful adaptation or what some are now calling "readiness" planning, and identify the measures that will facilitate our collective response to climate change, we stand to lose many of the coastal resources and investments that are so central to California's economy, environment, and indeed, way of life.

My second point is that at least in the case of shoreline management, I don't believe that California needs new agencies or major institutional overhauls to address climate change, as opposed to targeted improvements and improved coordination in the existing governing system. There are many state agencies and programs involved in climate change issues already, and effort is being made to coordinate these existing state programs and authorities. For the Commission's part, we have been an active participant in both the first multi-agency effort that produced the 2009 State Adaptation Strategy that includes a coast and ocean chapter, and the current effort to update that plan.[5] We have also worked closely with the Ocean Protection Council on the initial 2011and final 2013 sea level rise guidance that that agency has adopted.[6] We fully support continued if not strengthened coordination between and integration of existing state programs as an efficient path forward. This should include the continued leveraging of state resources to develop and provide technical and scientific information to support climate change adaptation, such as vulnerability assessments. At the same time, there may be a need to refine or amend specific authorities, and there is definitely a need to increase our collective capacity through targeted investment in specific issues or programs, to engage climate change adaptation issues at a meaningful level of effort.

In the case of the Coastal Commission, I submit that we already have a proven institutional framework for addressing specific adaptation needs related to land use and development regulation in our coastal zone. The California Coastal Act requires that each local government in the coastal zone prepare a Local Coastal Program or LCP that includes a land use plan and zoning ordinances and programs to implement the land use plan.[7] Each LCP must be reviewed and approved by the State Coastal Commission as consistent with and adequate to carry out the statewide resource protection and coastal development policies of the Coastal Act. Once an LCP is approved, the local government becomes the lead agency for permitting most coastal development above the mean high tide line, subject to a limited appeal authority of the Coastal Commission.[8]

---

[5] California Natural Resources Agency (2009). California Climate Adaptation Strategy. Available: http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf

[6] OPC 2013. State of California Sea-Level Rise Guidance Document. Available: http://www.opc.ca.gov/webmaster/ftp/pdf/docs/2013_SLR_Guidance_Update_FINAL1.pdf

[7] Coastal Act Section 30500.

[8] Coastal Act Section 30603. Appealable development generally includes development that is between the sea and the first public road paralleling the sea or within 300 feet of the inland extent of any beach or of the mean tideline of the sea where there is no beach; development located on tidelands, submerged lands, public trust lands, within 100 feet of any wetland, estuary, or stream, or within 300 feet of the top of the seaward face of any coastal bluff; in Counties any development that is not designated as the principal permitted use; and any development which constitutes a major public works project or a major energy facility.

Over 85% of our coastal zone is covered by approved LCPs that establish the allowable land uses, such as residential, commercial, recreational, and open space, along our coast, and that provide the policies and regulations to assure that coastal resources of statewide significance, such as public access and recreation, wetlands, sensitive species and habitats, agricultural lands, and scenic landscapes, are protected for the public. Significantly, LCPs also are required to address coastal hazards, such as shoreline erosion and flooding, and provide policies and ordinances to assure both that these hazards are minimized, and that every effort is made to avoid environmentally detrimental shoreline structures, such as seawalls and revetments and other negative impacts that may follow from how we respond to coastal hazards.[9] In short, we already have the institutional program, planning and policy infrastructure, including a robust state-local government partnership, necessary to pursue and implement more proactive land use planning to adapt to climate change.

And in fact, the Coastal Commission has been addressing the challenges of an inherently dynamic shoreline since its inception. This includes addressing the often difficult balance between protecting natural resources and shoreline processes, and protecting development and other critical infrastructure, such as wastewater treatment facilities or coastal Highway One. We have long dealt with eroding shorelines and the corresponding demands for shoreline armoring. We have always analyzed flood and landslide hazards, and attempted to locate development out of harm's way. And we have learned a great deal in the forty plus years of Coastal Act implementation. Climate change will make these hazards even more challenging to address, as sea level rise brings waves closer to shore, as erosion rates potentially accelerate, and flood hazards are intensified. But we can use our existing coastal management framework and knowledge, and the state-local planning partnership that we have built and been implementing for decades, to continue addressing these coastal dynamics.

So, my third main point is that we already have many examples of adaptive shoreline management to learn from and build upon in pursuing more effective statewide adaptation along the coast. The Coastal Commission has reviewed thousands of new shoreline developments, and approved substantial numbers of shoreline protective structures up and down the coast because the 1976 Coastal Act grandfathered in existing development for purposes of shoreline protection. From these we have learned a great deal about coastal engineering and what works better in various types of shoreline conditions. The Commission's policy has evolved from allowing more massive, unnatural concrete seawalls to requiring protective works to minimize their encroachment on sandy beaches and mimic the natural shoreline, through sculpting, texturing, and coloring of the concrete.[10] We have developed methodologies for analyzing and mitigating the impacts of shoreline structures on

[9] Coastal Act 30253 requires that new development "(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs." Section 30235 states that "Revetments, breakwaters, groins, harbor channels, seawalls, 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..."

[10] E.g. Pleasure Point CDP Application 3-07-019, available http://documents.coastal.ca.gov/reports/2007/12/Th13a-s-12-2007.pdf

our beaches, including innovative use of in-lieu fees for sand replenishment and public beach recreational resources.[11]

In cases of new shoreline development the Commission has also developed technical setback methods to assure that the new development would not become endangered over its projected lifetime. These methods have become increasingly sophisticated and we now routinely require technical "factor of safety" analyses from applicants so that we can assure the stability of a project site in the face of potential bluff failures.[12] And one of the most significant policy refinements of the Commission has been the use of a "no future seawall" deed restriction for new development. This restriction places an affirmative obligation on property owners to waive any rights to future shoreline protection in appropriate cases involving eroding bluff and shoreline properties. It requires coastal property owners to assume and thus internalize the risks of developing in a hazardous location by making clear that if and when their development is threatened, it will need to be relocated or removed, so that natural shoreline processes and the public beaches below will continue to be protected.[13] In broader scope, this condition is a way to implement what some are calling "planned retreat". It relies on giving private decision-makers clear signals for managing their private development risks such that the public resources are protected, as required by the Coastal Act.

But our experience has also shown us that the challenges of adaptation in developed, urban areas are deeply imbedded, and extremely complex to address. Many of our urban coastal areas built out in the post-WWII development boom that also happened to coincide with a relative "calmer" coastal period that had fewer, less intense storms.[14] The El Niños of 1977/78 and 1982/83 marked the end of the "calm" period and caused enormous amounts of property damage, shoreline erosion, and also often led to necessary emergency shoreline armoring.[15] Thus, when our Coastal Act was passed, we inherited many fixed development patterns in inherently hazardous coastal locations. As a result, the Commission has had to authorize hundreds and hundreds of shoreline protective devices, many through emergency approvals during extreme El Nino driven storm years.

Even more vexing, the Commission is increasingly grappling with the dilemma of "redevelopment" of existing residential and commercial areas. Whereas the Coastal Act allowed for the protection of existing development, it also has a clear policy against new development that would require a shoreline protective device or significant alteration of the shoreline in the future. But there can be a

---

[11] E.g. *Ocean Harbor House Homeowners Assn. v. California Coastal Commission* (2008) 163 Cal.App.4th 215., CDP Application 6-12-041 (Lampl & Baskin, San Diego, http://documents.coastal.ca.gov/reports/2013/3/Th23b-3-2013.pdf).

12 Johnsson, M. (2005) Establishing Development Setbacks from Coastal Bluffs. California and the World Ocean '02: pp. 396-416. doi: 10.1061/40761(175)37.

[13] E.g. CDP Applications 6-12-059 (Seascape Management Corp, http://documents.coastal.ca.gov/reports/2013/7/Th17a-7-2013.pdf), 5-13-051 (City of Long Beach, Ocean Boulevard, http://documents.coastal.ca.gov/reports/2013/5/W6d-5-2013.pdf), 5-13-077 (3222 The Strand, Hermosa Beach, Los Angeles County), 2-06-017 (Marshall Tavern, http://documents.coastal.ca.gov/reports/2012/11/Th11b-11-2012.pdf).

[14] Griggs, G. (2010). *Introduction to California's beaches and coast*. Berkeley: University of California Press, p. 67.

[15] US Army Corps of Engineers, Los Angeles District and State of California (April 1984), Coastal Storm Damage Winter 1983 -- A Task Force Report; and Dean, R.G., G.A. Armstrong, and N. Sitar (1984) California Coastal Erosion and Storm Damage During the Winter of 1982-83, prepared for the Committee on Natural Disasters, National Research Council, Report No, CETS-CND-023.

fine line between the repair and maintenance of an existing structure that may be entitled to shoreline protection, and a renovation, remodel, or redevelopment that essentially results in a new structure in the place of the old. In other words, the concept of the "economic life" of a structure is sometimes elusive, as buildings often don't really die but rather are reborn in place. Such cases frame our challenge going forward, which is to find adaptive policy approaches and mechanisms that recognize existing private rights and investments but that also protect our public beaches and recreational areas and other natural resources that are necessarily impacted by shoreline armoring.

For example, the Commission has been working closely with the community of Solana Beach and other involved stakeholders and public agencies, on developing an LCP and other programs that provide for intelligent long-run redevelopment of their built-out bluff top residential areas without sacrificing the public beaches and natural shoreline resources below. The LCP under development includes many detailed policies and standards to address the specific geophysical and redevelopment concerns of Solana Beach.[16] But we are still working on bringing together the residential, environmental, and other public interests around a set of policies that will get us to that sweet spot of intelligent, adaptive response over the long-run that protects coastal resources and provides for reasonable economic use of existing private property. And most recently, the Commission rejected a proposed 50 year Army Corps of Engineers' beach replenishment program being put forward as part of the solution of the shoreline management challenge in Solana Beach.[17] The Commission was concerned that the project had not sufficiently addressed the potential environmental and recreational impacts of the proposed replenishment, nor adequately addressed the inherent uncertainty of a very large, 50 year program. In short, the ACOE and Commission in part disagreed about how to build adaptive mechanisms, such as comprehensive monitoring and regular re-evaluation, into the project.

I raise the Solana Beach example to illustrate my fourth point, which is that adaptation along our shorelines is complex, involves many stakeholders, complicated technical and policy questions, and is context specific. While our general adaptation concerns and policy goals may be the same statewide, one size will not fit all in all places because of each area's unique geophysical dynamics, existing development patterns, and other factors. The adaptation options in rural, less developed areas are likely greater than in highly urbanized areas. The resources at risk vary along different types of shorelines and habitats. The hazard risks themselves depend on local geophysical conditions.

The Coastal Act's existing LCP program provides an appropriately sensitive land use planning and regulatory framework for addressing the need for context-specific responses, but we will need to increase our capacity to use it more effectively. Effective and inclusive planning takes time and resources to pull together the relevant technical information and analysis, provide for policy development among multiple layers of government and many stakeholders and often divergent concerns, and strike the right balance between public and private interests. And, while the challenges of conducting effective comprehensive land use and community planning are not new, adapting to climate change requires that we do it right at the interface of some of the most valuable coastal real estate, and cherished environmental space, in the world. Just ask the residents of Broad Beach in

[16] Solana Beach LCP Land Use Plan effectively certified June 2013. http://documents.coastal.ca.gov/reports/2013/6/W14a-6-2013.pdf.
[17] CD-003-13 (U.S. Army Corps of Engineers, Encinitas and Solana Beach). Revised findings available: http://documents.coastal.ca.gov/reports/2013/8/Th12a-8-2013.pdf.

Malibu, who to their credit have formed a geological hazard abatement district with significant financial commitments to collectively address their shoreline erosion problem, but who also face significant resource management and public land and recreational issues that must be addressed to do right by the public.[18]

Indeed, as in Broad Beach, one of our particularly complex challenges up and down the coast will be how to handle the shifting boundary between public trust land and private lands if the mean high tide moves inland. In California, most land seaward of the mean high tide line is subject to the public trust. Former uplands adjacent to public trust lands that are gradually submerged by a rising mean high tide line will probably become subject to the public trust. Because common law doctrines are very fact specific, there will undoubtedly be litigation as private structures are threatened by sea level rise and as property owners propose development in areas that may become subject to the public trust because of sea level rise.[19] It will be important that the Coastal Commission and other agencies coordinate closely with the State Lands Commission to address such issues in specific contexts.

The inherent complexity of shoreline management brings me to my last major point: we need to invest in and increase our capacity to engage in focused, shoreline management planning, up and down the coast, so that we can find and implement the optimum ways to adapt in each of our uniquely special coastal places. At a minimum this will require funding for state and local agencies directly implicated in shoreline management. The OPC and the Coastal Conservancy recently have been able to allocate some limited grant funding to support local climate change adaptation work and LCP planning.[20] We are working closely with them to assist with the effective allocation and coordinated use of these funds.

And the Commission itself has been very fortunate to recently receive a one-year budget augmentation to help us and local governments begin moving forward more proactively with our pending LCP planning workload, including with respect to the need to update our LCPs statewide to address climate change adaptation. One of the great gaps in the Coastal Act is that there is no requirement to update an LCP; thus, we have many LCPs that have not been comprehensively updated since they were first approved in the 1980s and early 1990s. And outdated land use plans undermine effective coastal management and economic development because they do not address current community needs and environmental conditions, and ultimately lead to more uncertainty, conflict and potentially poor decisions. It is critical, therefore, that we provide the capacity for local

---

[18] State Lands Commission, Broad Beach Restoration Project: Analysis of Impacts to Public Trust Resources and Values (2012). Available: http://www.slc.ca.gov/division_pages/DEPM/DEPM_Programs_and_Reports/Broad_Beach/Broad_Beach.html

[19] Another related issue that will probably be the subject of litigation is how the presence of shoreline protective structures affects the determination of where the mean high tide line intersects the shoreline. A 2009 Ninth Circuit decision regarding the effect of shoreline protective devices on the location of the mean high tide line ruled that upland owners cannot fix the location of the otherwise ambulatory property line by constructing structures. That case arose in the State of Washington and did not involve interpretation of California law, so it is not clear if courts in California would reach the same conclusion. (See United States v. Milner (9th Cir. 2009) 583 F.3d 1174.

[20] Local Coastal Program Sea-Level Rise Adaptation Grant Program, 2013. Grant announcement available: http://www.opc.ca.gov/2013/04/local-coastal-program-sea-level-rise-adaptation-grant-announcement-program/; California State Coastal Conservancy's Climate Ready Grant Program, 2013. Announcement available: http://scc.ca.gov/2013/04/24/climate-ready-program/.

governments to update LCPs, including addressing climate change, by providing funding and technical guidance and support from the state. The augmentation that the Commission received this year is the first step in improving our LCP planning, but to be an effective climate change adaptation investment, this funding will need to be extended into the foreseeable future, including increased monies for local government planning work. We are currently working with the Administration and are hopeful that we will have its support, as well as that of the legislature, so that we can begin undertaking in earnest enhanced LCP planning work to address climate change.

In the meantime, the Commission will continue to move forward to address climate change with the resources at hand. We have adopted a Strategic Plan with a significant focus on climate change work, and we are anticipating the release of a public review draft of our proposed Sea Level Rise Guidance very soon to help us implement adaptation measures in updated LCPs and in specific development proposals. We will be seeking comments on the document and anticipate bringing it to our Commission for formal consideration sometime later this fall. Of course, we will continue to work project by project and jurisdiction by jurisdiction to address climate change as we can. We have incorporated affirmative requirements to consider sea level rise using the best available science into several LCPs that have come before the Commission,[21] and we are routinely asking individual development applicants to address sea level rise in their coastal hazards assessments. And we will continue to press for adaptive management responses along the coast when we can, whether it is asking Daly City to evaluate the inland relocation of a coastal landfill, working with Caltrans to realign Highway One inland in northern San Luis Obispo County, or requiring that obsolete shoreline structures be removed at places like Stilwell Hall in Monterey County (now part of our state park system) so that natural beach areas can be restored and persist in the future.[22] Indeed, these cases give me hope that with the right focus, coordination of existing programs and authorities, and commitment of resources for proactive planning and intelligent redevelopment, we can find ways to adapt effectively, or achieve a state of on-going readiness over the long-run. Proactive planning and response will be costly; but as we have seen in the recent wake of Hurricane Sandy, not taking action will also be costly, both in terms of property and personal loss. I submit that investing in proactive adaptation planning and response now will lead to a much more desirable, and less expensive future, than will ad hoc, emergency or crisis-driven responses which, while resulting in short term protections of development, ultimately lead to the long-run loss of our coastal environment and economy that we have gone to such great lengths to protect.

Thank you for the opportunity to share these observations.

DR. CHARLES F. LESTER
Executive Director
California Coastal Commission

---

[21] E.g. Solana Beach (2013), Marina Del Rey (2012), Laguna Beach (2012), Crescent City (2011), Dana Point (2011), among others.

[22] CDP Application 2-11-024, City of Daly City Mussel Rock Revetment http://documents.coastal.ca.gov/reports/2012/7/F19a-7-2012.pdf (2012); Piedras Blancas Realignment, California Department of Transportation, Final Environmental Impact Report available upon request: http://www.dot.ca.gov/dist05/projects/slo1_piedras/index.htm (August 2010); Stilwell Hall, Consistency Determination No. CD-015-02 http://documents.coastal.ca.gov/reports/2002/10/W13a-10-2002.pdf (2002).