

California Coastal Commission Response to Comments

on the October 2013 Draft Sea Level Rise Policy Guidance

May 2015

PAGE	NAME/AFFILIATION	PAGE	NAME/AFFILIATION
1	Mike Bullock, Public Citizen	54	Brina Bodnar, Student, Piedmont Middle School
1	Gary Griggs, UC Santa Cruz	54	Carvel Tefft, Student, Piedmont Middle School
11	Paul Dueweke, Public Citizen	55	Connor Tang, Student, Piedmont Middle School
11	Tim Goncharoff, Public Citizen	55	Derek Simonsen, Student, Piedmont Middle School
15	Kimberly Flores, Public Citizen	56	Dimitri Manolis, Student, Piedmont Middle School
16	Dan Reineman, Graduate Student, Stanford	57	Dylan Bradsby, Student, Piedmont Middle School
17	Tom Adler, City of Chula Vista, Development Services Dept.	57	Dylan Pykett, Student, Piedmont Middle School
18	Matt Stoecker, Stoecker Ecological	57	Ethan Argue, Student, Piedmont Middle School
19	Damian Schiff, Pacific Legal Foundation	58	Hanna Pajt, Student, Piedmont Middle School
19	Ray Ramos, Public Citizen	58	Ian Joseph, Student, Piedmont Middle School
28	Cal OES	59	Kieran, Student, Piedmont Middle School
31	Laura Snideman, City Manager, City of Half Moon Bay	59	Michael M., Student, Piedmont Middle School
33	John Robertson, Public Citizen	60	Noah Shaffer, Student, Piedmont Middle School
33	Lwagner, Public Citizen	60	Reece Proctor, Student, Piedmont Middle School
33	Daniel Debrunner, Public Citizen	61	John Broberg, Public Citizen
37	Richard Wright, Public Citizen	61	Bill McLaughlin, Surfrider Foundation, San Francisco Chapter
38	Steve Matarazzo, City Administrator and Community Development Director, City of Sand City	62	Inga D, Public Citizen
39	Richard Sandzimier, Director, OC Planning Services, Orange County	64	Bill Weseloh, Weseloh & Young Real Estate Brokers and Land Agents
41	Bradley Cleveland, Public Citizen	65	Keith Adams, President, Coastal Property Owners of Santa Cruz County
42	George White, Planning Director, City of Pacifica	66	Uri Driscoll, Public Citizen
43	Josephine Axt, Planning Division Chief, LA District USACE	67	Laura Hunter, Environmental Health Coalition
46	Richard Bell, Mgr./Principal Engineer, Water Resources and Facility Planning, Municipal Water Dist. of Orange County	68	David Carlson, Resource Planner, County of Santa Cruz Planning Department
46	City of Santa Cruz	71	City of San Diego, Planning, Neighborhoods, and Economic Development Department
50	Michael Thornton, Sierra Club California	73	Heal the Ocean
53	Michael Cipra, Executive Director, Northcoast Regional Land Trust	76	Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities
53	Ava Biehn, Student, Piedmont Middle School		

PAGE	NAME/AFFILIATION	PAGE	NAME/AFFILIATION
78	Kim Prillhart, Planning Director, Ventura County Resource Management Agency	134	Megan Herzog, Sean Hecht, Environmental Law Center, UCLA
80	Rick Wilson, California Geologic Survey	137	Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District
81	Lisa Brown, Public Citizen	139	Phil McKenna, President, Gaviota Coast Conservancy
81	Joyce Dillard, Public Citizen	140	Natural Capital Project
84	Malcolm Johnson, Graduate Student, Monterey Institute of International Studies	140	Susan Jordan, Director, CA Coastal Protection Network
85	Monterey County Resource Management Agency	143	Surfrider Foundation
86	Brian Trautwein, Environmental Defense Center	148	Dave Ward, Planning Manager, City of Ventura
87	California Natural Resources Agency	152	Jim Nakagawa, City Planner, Community Development Department, City of Imperial Beach
93	City of Encinitas	152	Bob Battalio, ESA PWA
95	City of Oxnard, Development Services, Planning Division	158	City of Dana Point, Public Works and Engineering Dept.
98	Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	160	CMANC, Working Waterfronts Committee
101	Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	162	CA Dept. of Fish and Wildlife
107	Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	164	Heal the Bay
109	Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	178	Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building
113	Greg Dale, President, Humboldt County Farm Bureau	180	CA Dept. of Transportation
113	Richard Harris, San Francisco Public Golf Alliance	192	Chris Webb, Moffat & Nichol
115	Tijuana River NERR	194	Tim Schott, Executive Director, CA Assoc. of Port Authorities
117	Lyn Krieger, Director, Ventura County Harbor Department	197	Pat Saley, Goleta Slough Management Committee
120	CA Coastal Sediment Management Workgroup	200	Steven Aceti, California Coastal Coalition
121	City and County of San Francisco	202	Kimberly Brandt, Director, City of Newport Beach Community Development Dept.
121	Hanna Muegge, Public Citizen	206	David Behar, Climate Program Director, SFPUC
122	Sarah Newkirk, Coastal Project Director, The Nature Conservancy	207	County of San Mateo, Board of Supervisors
126	Meg Caldwell, Executive Director, Center for Ocean Solutions	212	County of Marin, Community Development Agency
132	John Corn, Axelson & Corn, Attorneys at Law	212	Brian Crawford, Director, County of Marin Community Development Agency

PAGE	NAME/AFFILIATION
220	Michael McCarthy, Interim City Manager, City of Monterey
220	Surfrider Foundation Legal Dept.
224	Sara Aminzadeh, Executive Director, California Coastkeeper Alliance
228	SANDAG
228	Bob Shapiro, Public Citizen
229	NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management

Name/ Affiliation	Key Topic	Comment	Response
Mike Bullock, Public Citizen	Best Available Science	"I looked at the Executive Summary. People need to understand the magnitude of the threat we face and the magnitude of the policy changes we need to have a chance to stabilize the climate at a livable level. Your report does not help...SLR depends on the assumptions as to the temperature rise trajectory of the Earth. This depends on luck and what GHG reduction trajectory we (humanity, but California needs to set a good example) achieve. As an example of the trouble we are in, SANDAG wants to ignore the whole problem and keep building freeways. If we ignore S-3-05, there is little hope. We will be overwhelmed. The CC report fails to explain any of this. It is a misleading white wash. Environmentalists, will, for the most part have no complaint, I fear. They think any discussion of SLR is good, I fear. Please bring the SLR report in line with reality. The policies adopted by the governments of the world will matter."	Text emphasizing the magnitude of the challenges posed by sea level rise was added to the Introduction. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level.
Gary Griggs, UC Santa Cruz	General	"It reads almost like a Ph.D. dissertation in being a document that tries to cover everything about sea-level rise globally, and along the California coast and its future impacts and how to assess those; but is not, at least in my opinion, a document that many if any planners will be able to understand or easily utilize."	A caveat was added in the Introduction under the section marked "Purpose and Scope of Guidance Document" to encourage users to navigate to sections with the level of detail that is most appropriate for their particular purposes. Multiple levels of detail are included in the Guidance because it is geared toward a broad audience.
Gary Griggs, UC Santa Cruz	Planning	"I don't think there are any incentives in this document that will encourage the staff planners that I have worked with in 4 different local government planning agencies to revise their LCPs."	As Guidance, this document does not require LCP updates. However, the Introduction does describe grant programs that support LCP updates, and the Guidance includes references to many informational resources that should be helpful to planners. Information has also been added to the Introduction describing the costs of NOT proactively addressing sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Planning	<p>"I sense a general approach throughout this document, to summarize somewhat roughly: Here are the hundreds of things you have to do, here all of the numbers you need to come up with, and all the problems you have to solve, and all of the maps and projections you need to develop, although we really aren't here to help you, but rather we are throwing out all of these challenges and requirements. Here is a long list of references, however, that may be of help if you can understand them."</p>	<p>Coastal Commission staff is available to help explain the Guidance Document and provide training on how to implement the guidance. Also, the Coastal Commission has added 20 new positions to specifically help with LCP updates and certifications, and staff is available to help support local governments in addressing SLR. This document was prepared to be helpful to people with a broad range of expertise and knowledge of sea level rise. Many lists in the Guidance are intended to be helpful options rather than checklists. Also, the Guidance acknowledges that the Guidance itself is one of many resources needed to support work on sea level rise planning at the local level. Language has been added to the document further acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.</p>

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 6-7.'Determine a range of sea-level rise projections relevant to LCP planning area.... Next, they should modify those projections to account for local conditions.' While this is an admirable goal, I think there are two very significant challenges to this goal and I've discussed this in detail later in my comments. 1) there are not enough tide gages along the California coast to provide more details on "local conditions", only 12 gages for 1100 miles of open coastline, or on average one every 90 miles, with some big gaps (Monterey to San Francisco, for example). 2) some of these have short records or discontinuous records (see records for Santa Barbara and Monterey gages below, for example), so modifying regional values is a huge task that very few people would be capable of. This is really asking users to fine-tune something that isn't precise to begin with, and will very likely be changing in the decades ahead. So unless you happen to have a tide gage nearby, where do you go to get data to modify projections for local conditions? This would be an excellent place to recommend the installation of additional tide gages so we can track sea level more locally. I also doubt that any local planning departments have staff with the tools or skills to figure out how to account for local conditions (e.g. local leveling surveys, bench marks, etc.)."	In several places, the Guidance states that unless local jurisdictions have access to information on location conditions (such as local vertical land motion), that they should use the NRC sea level rise projections without modification. The exception is the Humboldt Bay and Eel River area, where subsidence is substantial and should be taken into account when projecting sea level rise. Additionally, the need for improved and enhanced statewide monitoring systems is noted in Chapter 9 (Next Steps).
Gary Griggs, UC Santa Cruz	General	"P. 8 and 10- Flowcharts: While I'm sure staff spent considerable time and effort developing these two graphics, I wonder how many people really use these or find them understandable. My first thought when I see flow charts like these is: way too complicated, very intimidating and user unfriendly. I don't think many people really have the patience to follow all of these arrows and try, like being in a maze, to find your way out. Figure 4 on page 38, in contrast, is straightforward and understandable, very similar to what we included in our Sea-Level Rise Adaptation Guide."	The flowcharts on pages 8 and 10 of the October 2013 Draft were updated to be more user-friendly and clear.
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 28. Under A. A. BEST AVAILABLE SCIENCE ON SEA-LEVEL RISE: ' <i>The Global Sea Level Rise Scenarios for the United States National Climate Assessment (2012) report provides a set of four global sea-level rise scenarios ranging from 0.2 to 2.0 meters (8 inches to 6.6 feet) reflecting different amounts of future greenhouse gas emissions, ocean warming and ice sheet loss.</i> ' It would be useful and important here to attach a date or time frame for these values (e.g. 2100) so there is no misunderstanding."	Labels were added specifying that the projected sea level rise is for the year 2100.

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Best Available Science	"I'm sure CCC staff knows that the IPCC 5th Assessment Report is out now out, but may have decided not to get into this new document at this late stage? Not unexpectedly, the 5th Assessment projections are conservative (e.g. lower in this case than NRC Report)."	A discussion on the 5th IPCC AR was added to Appendix A and Chapter 3 (Sea Level Rise Science).
Gary Griggs, UC Santa Cruz	Best Available Science	"Going into the detail of which IPCC models produced which sea-level rise values is almost certainly going to be lost on the planners in every coastal community. They want a number or a range of numbers not an explanation of all of the different climate models and ranges. How does this mesh with the recommendation page 6-7 listed above on ' <i>Next, they should modify those projections to account for local conditions.</i> ' What are the projections to use, for example? In this regard, Figure 8 on page 113 is a great summary and will probably be as detailed as any user needs or wants and also provides the levels of uncertainty that need to be kept in mind."	As stated throughout the document, and in line with OPC recommendations, the Commission recommends using the projections from the NRC report. Detail regarding the IPCC scenarios is included because this document is intended to be a multipurpose resource for audiences with differing levels of expertise. Caveats in the introduction urge users to skip to sections that are relevant and appropriate for their needs.
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 30. A. BEST AVAILABLE SCIENCE ON SEA-LEVEL RISE: ' <i>Areas north of Cape Mendocino could experience rapid subsidence of up to 2 meters (about 6 feet) when there is a large earthquake on this active subduction zone.</i> ' With a very large subduction zone earthquake and subsidence, there will also be a large tsunami that will raise sea level to a considerable height very quickly."	Language was added addressing this topic.
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 31. B. PHYSICAL IMPACTS OF SEA-LEVEL RISE: There is an important impact missing here or not called out, and this same issue actually is more completely explained on P. 66-70 under 'V. ADDRESSING SEA-LEVEL RISE IN COASTAL DEVELOPMENT PERMITS'. I believe that this language may go back to the original Coastal Act. There are four impacts listed on p. 31 all of which are valid: Flooding and inundation; Erosion; Changes in sediment supply and movement; Saltwater intrusion. But a very significant additional impact included in discussion on page 39 and 66-70, which I believe has been responsible for more damage to public and private property over the past 30 years than any of these four is Wave Impacts."	A discussion of wave impacts has been added to Chapter 3 of the Guidance (Sea Level Rise Science).

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Best Available Science	"p. 31 Saltwater intrusion: ' <i>An increase in sea level could cause saltwater to enter into ground water resources, or aquifers. Existing research suggests that rising sea level is likely to degrade fresh ground water resources in certain areas, but the degree of impact will vary greatly due to local hydrogeological conditions.</i> ' Most coastal aquifers or those exposed along the coast are already intruded by seawater. Because differences in ground water levels and drawdown by overdraft is on the order of dozens or hundreds of feet, in contrast to cm or inches for sea-level rise over at least the next several decades, sea-level rise in all likelihood is not going to be very insignificant factor in increasing sea water intrusion for many years. A search of the literature that I have done provided no solid data on this process other than one recent paper that said it was a wash in the near future."	Thank you for your comment. Saltwater intrusion is included because it has the potential to affect some jurisdictions, and this Guidance is intended as a comprehensive resource to be used statewide.
Gary Griggs, UC Santa Cruz	General	"p. 32 Coastal development (Sections 30235, 30236, 30250, 30253): ' <i>The replacement value of property at risk from sea-level rise for the California coast is approximately \$36.5 billion (in 2000 dollars, not including San Francisco Bay).</i> ' There should be some reference to time period here, e.g. by 2030, 2050, 2100?"	Language was added to specify that the time period is to the year 2100.
Gary Griggs, UC Santa Cruz	Planning	"p. 35. Biological productivity of coastal waters (Section 30230, 30231): ' <i>Sea-level rise could affect biological productivity of coastal waters by changing the types of habitats that are available, which would alter species compositions, and could potentially affect the entire coastal food chain.</i> ' This statement sounds extreme and from my perspective reduces the credibility of the report, at least over the short term of the applicability of the Guide. Would even 12-24 inches of sea-level rise really potentially affect the entire food chain? I seriously doubt that this would be the case anywhere on the open coast. There is also virtually nothing that can be done about this scale of change so what is the value of putting this into a policy guidance document and making the document even longer and more overwhelming. Will it affect an LCP or a future project?"	Revisions have been made to make this topic more specific.

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Planning	"Archeological and paleontological resources (Section 30244): 'Archeological or paleontological resources could be put at risk by inundation, flooding, or by an increase in erosion due to sea-level rise. Areas of traditional cultural significance to California Native American tribes, including villages, religious and ceremonial locations, middens, burial sites, and other areas, could be at risk from sea-level rise. For example, the Santa Barbara Channel area has thousands of archaeological sites dating over 13,000 years that are at risk of being destroyed or altered from small amounts of sea-level rise.' I have a similar response as to the statement just above. Why include this in a policy document? I also seriously doubt that there are thousands of archaeological sites within a few feet of sea level; if there were they would have been destroyed by now during past ENSO winters with high tides, storm surge, elevated sea levels and large waves, or by human impacts."	Please refer to the citation. This topic is included because archaeological resources are listed as a coastal resource in the Coastal Act and as such are important resource to be considered when updating or developing an LCP or when approving a CDP. As identified throughout the Guidance document, sea level rise is expected to worsen the effects of storms and ENSO events, so that areas that have been safe historically may not continue to be safe in the future.
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 39. Identify potential physical sea-level rise impacts in LCP planning area: 'Consider how sea-level rise could interact with or exacerbate the following local water conditions: seasonal erosion, tidal range, surge, increased water levels from atmospheric forcing due to an El Niño Southern Oscillation (ENSO) or Pacific Decadal Oscillation (PDO), and waves, usually from a 100-year storm event (i.e. an eroded shoreline condition), in addition to the local sea-level rise projections.' For most open coast areas, all of the specific impacts are included in this list, and rather than expect 76 different local government planning departments to make assessments, guesses, or just give up, it would be more sensible and effective, based on the work and measurements that have been made by coastal oceanographers and geologists, to simply list what reasonable or expected values are for each of these parameters (ENSO, storm surge, wave run-up, etc.) and help the staff out...Appendix B sounds like the solution, but Appendix B is 28 pages long and contains figures and tables that will be very confusing to all but a few scientists: Figure 9, Figure 10, table on p. 124, Table 7 and 8, 9 and 10, for example These are really not understandable or user-friendly if you are a planner with no science or ocean or sea-level background."	The Guidance directs planners to studies and reports that have already done these analyses, but Appendix B is provided for planners who wish to do that work themselves. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 41-42. Table 4 lists a number of sea-level rise mapping tools. I think that many of these don't have the topographic precision to be very useful for sea-level rise of the range we are expecting in the near-term future: e.g. 6 to 12 inches over the next several decades. Are these really of the resolution that is going to be helpful for localized land use decisions? CoSMoS- a numerical modeling system to predict coastal flooding. Again, are planners at local level going to have the skills or experience to use this model?"	Regional planning efforts can use different scales of information than site-specific analyses. As a comprehensive, multipurpose document meant for use statewide, this Guidance contains tools and resources with varying levels of complexity for users to consider. As stated throughout the document, Commission staff is available to support local governments and project applicants in implementing the recommendations in the Guidance.
Gary Griggs, UC Santa Cruz	Best Available Science	"From our experience in performing a Sea-Level Rise Vulnerability Assessment for the City of Santa Barbara (which is referenced in the Draft Report), the single most important tool, but that I can't find mention of in the CCC Draft Guidance, is the newest statewide LiDAR data. This is very precise, covers nearly all developed coastal area of the state, and with some GIS skills, which most planning departments now have, precise elevations for virtually any coastal community can now be delineated and along with a sea-level rise value, can be used to develop future land use designations and decisions. The community will know very accurately which areas will be flooded and then inundated by what time frame."	LiDAR is included as a resource in Appendix B.
Gary Griggs, UC Santa Cruz	Planning	"P. 43 Step 3 - Assess potential risks from sea-level rise to coastal resources and development in LCP planning area/segment: <i>'Will the resource/development be harmed if environmental conditions change just a small amount? What are the physical characteristics of resource/asset? (E.g. geology, soil characteristics, hydrology, coastal geomorphology, topography, bathymetry, land cover, land use, etc.). Do any of those characteristics make the resource especially sensitive? Are there amounts of sea-level rise that cause sensitivity to sea-level rise to increase?'</i> These questions are extremely fine-scale and detailed. We don't know the sea-level rise elevations for the future well enough to answer these questions. A "small amount" of sea-level rise? What does this mean? Do we have the elevation control to answer this? Do soil characteristics really matter? Again, this to me is a very large shopping list and there are really much simpler ways to go about this and still arrive at a useful and guiding LCP."	A sentence was added to clarify that the list of questions are meant to guide users through the consideration of each of the listed characteristics. Each question does not have to be answered thoroughly.

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Adaptation	"The guidelines are summarized in 4.1 Planning and Locating New Development: There are 21 sections or lists of recommendations included. Read this list carefully and try to imagine what it would take in terms of human hours and skills to accomplish all of these. Some of these are virtually impossible to complete with any degree of certainty that the outcomes have meaning:"	These adaptation strategies were moved to Chapter 7 (Adaptation Strategies). It contains a wide range of adaptation strategies, and these are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations. It is not expected that planners will implement each of the strategies listed. Rather, they should pick options that are applicable to their jurisdiction and in line with Coastal Act requirements.
Gary Griggs, UC Santa Cruz	Best Available Science	<i>"Include sea-level rise in tsunami hazard assessments: Sea-level rise should be included in tsunami hazard assessments, including in tsunami wave run-up calculations.'</i> We don't know tsunami inundation elevations or areas with any degree of certainty simply because there is so little historical record, and quite honestly, there have been only a handful of damaging tsunamis in California over the past 200 years. There isn't agreement on tsunami runup although there are models. But we are talking about meters to be damaging. Now we need to add cm of sea level rise on a scale of meters of runup, where there is high uncertainty. It just doesn't make sense. We can be very precise but is it accurate?"	The inland extent of tsunami flooding depends upon the location of the wet-dry boundary and sea level rise will modify this location, as well as tsunami elevations. While the influence of sea level rise may be small when compared with inundation uncertainty, sea level should be considered when tsunami risks zones are being identified.
Gary Griggs, UC Santa Cruz	Adaptation	<i>"Require "soft" or "living" shorelines: On appropriate shorelines, require new development to use "soft solutions" or "living shorelines" as an alternative to the placement of shoreline protection to enhance natural resource areas, dune restoration, sand nourishment, etc.'</i> How much of California's outer exposed coast does this really apply to? For those areas where most of storm damage and flooding have occurred in the past, soft or living shorelines simply aren't going to be effective. Broad Beach was approved to have a soft sandbagged shoreline and it was destroyed with the first storm waves."	Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations. The need for additional research on living shorelines is included in Ch. 9 (Next Steps).

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Adaptation	<i>""Establish a beach nourishment program and protocols: New policies may be needed to address increased demand or need for beach nourishment with sea-level rise. Policies could establish a beach nourishment program and protocols for conducting beach nourishment, including measures to minimize adverse biological resource impacts from deposition of material, including measures such as timing or seasonal restrictions and identification of environmentally preferred locations for deposits." From the SANDAG project experience, I think this is a misguided and very expensive and short-term approach that should be recognized as such...I think the Coastal Commission should think carefully about whether they want to be encouraging beach nourishment as a solution to sea-level rise. There is no evidence that this is going to be effective along the areas where there are no or only very narrow beaches today, which are the areas where nourishment has been done in the past. If sand didn't remain there under natural conditions, why should it remain there if it is artificially added?"</i>	Thank you for your comment. Chapter 7 (Adaptation Strategies) presents a variety of adaptation options, including beach nourishment. As noted in the chapter, strategies should be considered on a case-by-case and location-specific basis and implemented based on the requirements of the Coastal Act and in a way that takes into account local circumstances. Language has been added to the chapter noting that multiple adaptation strategies will be needed in most locations, and these strategies may have to change over time to reflect changed conditions.
Gary Griggs, UC Santa Cruz	Best Available Science	"p. 68-69 2.1 Analyze relevant sea-level rise impacts. Previous paragraph lists: Impacts associated with sea-level rise generally include erosion, inundation, flooding, wave impacts, and saltwater intrusion. The impacts listed beneath this heading include: Geologic stability, Erosion, Flooding and Inundation, and Other Impacts. However, Wave Impacts, listed in the preceding paragraph, is not included. I've discussed this earlier and why I believe this is one of the most important hazards to evaluate based on past El Nino events."	Wave impacts have been added to Chapter 3 (Best Available Science on SLR) and Chapter 6 (Addressing SLR in CDPs) and are also discussed in Appendix B.
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 72. 'Identify all hazards that may impact the proposed project site or proposed development. Such hazards can include shoreline erosion, bluff erosion, flooding, inundation, elevated ground water, and saltwater intrusion.' Again Wave Impact should be included here, and is far more significant in the near term future and will affect far more investment and development than saltwater intrusion."	Wave impacts have been added to Chapter 3 and Chapter 5.
Gary Griggs, UC Santa Cruz	Best Available Science	"P. 81. Figure 6. In Box 2. Wave Impact should be includes as a hazard."	Change was made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
Gary Griggs, UC Santa Cruz	Monitoring, Research Needs, and Next Steps	"p. 86. VI. ADDITIONAL RESEARCH NEEDS: This is a large list of topics that can be useful for researchers in this discipline, although my guess is that most of them won't read this document and see this list. I won't get into the specifics of each of these although they raise a number of important questions, many of which probably aren't likely to be answered any time soon. Dedicated funding to study these would insure that at least some of them are undertaken."	Chapter 9 (Next Steps) is framed as future steps that may require collaboration, funding, and expertise. Additional language has also been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions.
Gary Griggs, UC Santa Cruz	Best Available Science	"p. 109-110. A.4. <i>'Approaches for Projecting Future Global Sea-Level Rise. Despite these challenges, sea-level rise projections are needed for many coastal management efforts and scientists have employed a variety of techniques to model sea-level rise, including...There are strengths and weaknesses to each approach, and users of any sea-level rise projections should recognize that there is no perfect approach for anticipating future conditions.'</i> This is very important perspective that is tucked away in the Appendix and should be explained in the Guidance document where specific sea-level rise values need to be selected or determined for application throughout the LCP updates. The upfront expectation is that somehow the planner from local government has to determine the correct value, but here the reality is explained that "there is no perfect approach" but lots of different methods that have been used by very experienced scientists. So what is the planner to do? Is all of the detailed explanation of these 3 different approaches really useful for these planners? Again, a conversation with some of these people in the trenches isn't too late to follow up on. I think its clear that none of the local government planners I have worked with would have a clue, or the time to go any further on this...Figure 8 (which is an excellent addition to this guidance and should be up front in the body of the report) makes this quandary very clear."	A section in Chapter 3 (Sea Level Rise Science), was added explaining why projections are given in ranges and the importance of using scenario-based analysis to plan for uncertain future conditions. Also, detail on sea level rise projection methods are included in Appendices A and B because this Guidance is intended to be a comprehensive resource for audiences with a wide range of knowledge levels and information needs.
Gary Griggs, UC Santa Cruz	Best Available Science	"I believe that the best and most useful approach is to go with the NRC report projections for 2030, 2050 and 2100, and don't try to specify locally specific differences. Perhaps 25 or 30 years from now this may make sense when we have more data and trends are clearer."	The Guidance recommends using the projections from the NRC report without modification except for in locations in the Humboldt Bay region and others where local vertical land motion is significant. The option to allow local governments to modify the projections based on local uplift was added at the request of local governments. The document also suggests focusing on 2030, 2050, and 2100, as suggested in this comment, unless other time periods are more relevant to the planning process. In these cases, the Guidance suggests interpolating between the time points in the NRC projections.

Name/ Affiliation	Key Topic	Comment	Response
Paul Dueweke, Public Citizen	Planning	<p>"Your planning document may help mitigate the 1.6 m sea-level rise, but what if that estimate is incorrect? What if the actual number is ten times that, as been projected by some climate models? If you look at every coastal city in America, you find that only one has the potential to barricade itself from the sea--the SF Bay Area inside the Golden Gate. A dam at the Golden Gate would not only save the capital investment in the Bay and Central Valley cities, but would save the Bay marshes and the Central Valley agricultural and natural environments. The SF Bay is the ONLY coastal metropolitan area that can do it because of the unique mountainous topography along the coast and the narrow inlet to the Bay...The reason I am bringing up the seemingly absurd concept of a Golden Gate Dam to you is that such a thing will certainly be considered if and when the threat finally strikes and the losses are clear and present. If the sea level rise occurs over a century or more, there may be enough time to begin the long and painful political process of hoping, denial, acceptance, bickering, and finally action to get a structure in place before too much damage is done. If the rise occurs, however, in a significantly shorter period than a century, the SF Bay and Central Valley will probably suffer the same obliteration as all other coastal areas. In other words, the unique defensibility of the SF Bay can easily be lost if people are not at least psychologically prepared for action. Preparation is the key, and preparation requires someone to start talking about the cataclysm, the consequences, and the cures. Such a horrendous environmental disaster and such an outrageous solution must at least be on the table."</p>	<p>Thank you for your comment. A section was added to Chapter 3 (Sea Level Rise Science) on scenario-based analysis of potential future sea level rise, and in that discussion it is acknowledged that planners may choose to consider outlying sea level rise values that are deemed appropriate. Chapter 3 (Sea Level Rise Science) also includes a short discussion of extreme events and abrupt change.</p>
Tim Goncharoff, Public Citizen	Planning	<p>"There is much to like...but also some surprising omissions. The very first guiding principle is 'A. <i>USE SCIENCE TO GUIDE DECISIONS [Coastal Act Sections 30006.5; 30335.5]</i> -- 1. <i>Acknowledge and address sea-level rise as necessary in planning and permitting decisions.</i>' The document goes on at length about local planning and permitting decisions, which is important, but it says little about action at the state level. When guiding planning and building decisions, the most powerful tool we have is the State Building Code, now known as CALGreen, administered by the California Building Standards Commission, an independent commission within the State and Consumer Services Agency. If we seriously want local agencies to consider sea level rise and other climate change impacts in their planning, the best place to codify these recommendations is in the state building code. Indeed, many local governments have no building code of their own, but just use the state's."</p>	<p>Thank you for your comment. The Guidance acknowledges that sea level rise will require work beyond the scope of the Coastal Commission alone. While the scope of this Guidance document, as stated in the Introduction, has been focused on LCP and CDP planning, the staff recognizes the value of statewide sea level rise planning. The Coastal Commission has and will continue to coordinate with other state agencies on such efforts.</p>

Name/ Affiliation	Key Topic	Comment	Response
Tim Goncharoff, Public Citizen	General	"I compliment the commission and staff on the effort that went into the Draft Sea-Level Rise Policy Guidance. It is an honest effort in the face of rapidly changing information and emerging science. As a local planner, however, it presents me with substantial challenges."	Thank you for your comment. As stated throughout the document, Commission staff is available to support local governments and applicants as they implement the recommendations of this Guidance.
Tim Goncharoff, Public Citizen	Planning	"...the City and County of Santa Cruz [is] an area similar in many ways to much of the developed coastline of California. There is little undeveloped property. A great deal of public infrastructure as well as residential and commercial development lies close to existing sea level. Our downtown shopping district, police department and city hall are six feet above current sea level. The challenges of implementing the recommended changes to the Local Coastal Program seem immense. The overall impression is that the Commission was envisaging proposed development on a virgin landscape, with abundant open space, land sloping steadily uphill from the shore, multiple undeveloped locations at various elevations to choose from, and private and public property owners with unlimited resources. Of course, this describes nowhere in present-day California."	Thank you for your comment; it was taken into consideration during the revision process. Chapter 7 (Adaptation Strategies) presents a wide array of strategies for protecting coastal resources and development, and these strategies should be implemented on a case-by-case and location-specific basis in a way that fulfills the requirements of the Coastal Act and takes into account local circumstances. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Tim Goncharoff, Public Citizen	Planning	"As for public infrastructure, such as wastewater treatment plants (discussed at some length in the plan), given the uncertainty, when do we move them? And to where? Again, the wise choice seems to be do it as soon as possible, and put it as high as possible. Of course, wastewater treatment plants are placed near sea level for sound reasons. Assuming we can find a new inland location for our plant, and the money to pay for it, do we then plan on pumping lower elevation wastewater up to it while we wait for the oceans to rise? What of the cost in energy and greenhouse gas emissions? And of course, this is just one example. Infrastructure of all kinds is at risk, from stormwater systems to roads and power plants. The cost and uncertainty of all this leads many planners and public officials to just throw up their hands in defeat."	Thank you for your comment; it was taken into consideration during the revision process. Language has been added to emphasize the need for continued funding and technical support for local jurisdictions. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges and particularly challenging issue areas, such as waste water treatment plants and other critical facilities at risk from sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Tim Goncharoff, Public Citizen	Adaptation	"A glaring gap in the plan is the kind of large-scale coastal protection projects now common in the Netherlands and currently being considered for New York and elsewhere. We cannot protect the entire coast, but does it follow that we can't protect anywhere? I can't blame the Commission for wanting to avoid the argument over what to save, but the discussion needs to happen, and soon."	Thank you for your comment; it was taken into consideration during the revision process. Language has been added to emphasize the need for continued funding and technical support for local jurisdictions and for regional coordination on adaptation strategies. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution.
Tim Goncharoff, Public Citizen	Policy and Legal analysis	"California should indemnify local communities against lawsuits for loss of property or property value when that loss is the result of a properly-approved Local Coastal Program."	Thank you for your comment. A chapter on the legal context of adaptation planning has also been added to the Guidance, acknowledging some of the various legal issues that might arise when planning for sea level rise. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution.
Tim Goncharoff, Public Citizen	Best Available Science	"One of the principal difficulties lies in the call for local governments to use the best available science and to adjust plans as scientific projections evolve. The document then goes on to explain that current projections of sea-level rise vary for some areas from 10 inches to 14 feet!"	The Guidance recommends that the sea level rise projection ranges from the NRC report should be used, for now, as the best available science. A section in Chapter 3 (Sea Level Rise Science), was added explaining why projections are given in ranges, and how scenario-based analysis can be used in response.
Tim Goncharoff, Public Citizen	Planning	"...the proposal calls for local planners to plan for a "range of possibilities." How, I ask you, do we do that? Floating buildings? (This is, indeed, suggested at one point.) The only reasonable choice is to plan for a worst-case scenario, likely with an additional buffer built in to acknowledge that the projections are changing quickly, and tending toward greater and faster sea level rise. "	Multiple chapters in the document describe the need to consider the worst case scenario when planning and the differences between planning and design for a range of scenarios. The document also discusses options for adaptive planning that is responsive to changing conditions. Additionally, a section in Chapter 3 (Sea Level Rise Science) was added explaining why projections are given in ranges, the reason to analyze the worst case scenario, and why scenario-based analysis can be used in response.

Name/ Affiliation	Key Topic	Comment	Response
Tim Goncharoff, Public Citizen	Policy and Legal analysis	"The Commission imposes maximum height restrictions along most of the coast, and there is no suggestion of relaxing these. If any new building must sacrifice the bottom 16 feet, in many cases there will no longer be enough vertical clearance to construct a financially viable structure."	Thank you for your comment. The document acknowledges this conflict in Chapter 7 (Adaptation Strategies), and LCPs and CDPs will continue to be reviewed on a case by case and site by site basis.
Tim Goncharoff, Public Citizen	Adaptation	"Other suggestions further hamper the redevelopment of existing areas. "Restricting the area of a lot that can be developed," "establishing minimum setbacks from bluff edges," and "requiring property owners to assume the risks of developing in a hazardous location" are all sensible precautions when dealing with undeveloped land, but this will be rare. In most cases it will be applied to already-developed property. The likely result is that economic development stops, that older structures are not replaced, but are instead allowed to slowly degrade over time. The economic effect on property owners is likely to lead to a great deal of expensive litigation against local governments, with no certainty of a positive outcome."	A new chapter has been added regarding legal issues. Also, as stated in the Guidance, the adaptation strategies listed in Chapter 7 are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations. LCPs and CDPs will continue to be reviewed on a case by case basis.
Tim Goncharoff, Public Citizen	Adaptation	"The one acknowledgment of this difficulty is the recommendation to establish "Acquisition and buyout programs." Seriously? When local governments can barely keep their doors open, the proposal is for them to raise billions of dollars to buy out coastal property owners while at the same time paying to relocate and rebuild all of our public infrastructure? Given the lack of resources and the scarcity of replacement land in most areas, this is a recipe for an endless legal nightmare and a declining spiral of local revenues as coastal properties decline, are abandoned or destroyed and not replaced."	Chapter 7 (Adaptation Strategies), includes a wide array of adaptation strategies that should be considered on a location specific and case by case basis. Language has been added emphasizing the need for continued funding and technical support for local jurisdictions.
Tim Goncharoff, Public Citizen	Adaptation	"The suggestions for "beach nourishment and replenishment" are inadequate, contradictory and unrealistic. They again seem to imagine a gently sloping landscape with no development, allowing for the gradual retreat of beaches and wetlands. Where in California does this landscape exist? In Santa Cruz, where I live and work, most of our beaches are surrounded by high cliffs. A few feet of sea level rise will mean these beaches largely disappear. And the prospects of getting permits to dredge millions of tons of sand annually from the Monterey Bay National Marine Sanctuary seem slight, to put it mildly. The reality, here and in many other areas, is that the beaches will be largely lost, with consequent dramatic impacts on habitat and tourism. Blithely suggesting that local governments can somehow mitigate these impacts sets us up to fail."	Chapter 7 (Adaptation Strategies), includes a wide array of adaptation strategies that may not be applicable in all situations. Instead they should be considered on a location specific and case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
Tim Goncharoff, Public Citizen	Planning	"I recognize that Coastal Commission and other state staff are struggling to deal with an unprecedented challenge, and this is a worthwhile first step. But simply putting the burden of dealing with impossible circumstances on struggling local governments is unrealistic, and a waste of a valuable planning opportunity. I encourage the staff and the Commission to be more forthright and courageous in acknowledging the scope of the problem and the need for unprecedented action to address it."	Thank you for your comment. Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local jurisdictions.
Tim Goncharoff, Public Citizen	Planning	"The reality is that most coastal communities have nowhere to go. There is little adjacent land to retreat to, and insufficient public resources to acquire it. Some low-lying towns are going to cease to exist. Many more will lose much of their beachfront commercial and residential development. There will be widespread failures of waste water treatment plants and other infrastructure. Mandating that local communities plan for these eventualities does not create the resources for them to do so."	Thank you for your comment. Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local jurisdictions.
Tim Goncharoff, Public Citizen	Planning	"The state should undertake a comprehensive study of at-risk coastal infrastructure and develop a statewide plan for relocating, consolidating, rebuilding or otherwise preparing for the effects of sea-level rise, with a statewide funding mechanism to pay for it all."	Thank you for your comment. The Introduction includes a section on state efforts to address climate change and sea level rise and Chapter 9 (Next Steps) acknowledges the Coastal Commission's ongoing efforts to coordinate with other state agencies on future projects, including efforts to plan for impacts to infrastructure.
Tim Goncharoff, Public Citizen	Policy and Legal analysis	"The California Building Code should be amended to include new requirements for coastal development, to encourage consistency across the state and to relieve local governments of difficult, time-consuming, expensive and very contentious planning efforts."	The California Building Code is outside of the scope of the purview of the Coastal Commission, but staff recognizes the importance of incorporating sea level rise preparation strategies into the California Building Code.
Tim Goncharoff, Public Citizen	Policy and Legal analysis	"California should review local agency formation commission requirements to streamline the process of annexing land, combining jurisdictions, or disincorporating cities as needed to address the impacts of climate change."	Thank you. This issue is important for addressing sea level rise, and it requires work beyond the scope of the Coastal Commission alone. Staff considered this issue during the revisions to the Guidance, and will continue to coordinate with other state agencies to address sea level rise.
Kimberly Flores, Public Citizen	Adaptation	"An effective action that can be taken to help is soft engineering, such as beach nourishment. Beach nourishment is an effective way to protect the backshore and at the same time provide access and a recreational beach. But it is not a permanent response; it must be maintained on a regular basis to remain effective, so establishing a committee to maintain it is key."	Chapter 7 (Adaptation Strategies), includes beach nourishment as an adaptation strategy and, in the description, the need for maintenance is included.
Kimberly Flores, Public Citizen	Monitoring, Research Needs, and Next Steps	"Secondly, keeping the sea level changes recorded and studied can also help with preparing with the changes it brings. That is why there should be people monitoring and planning for the worst in case the sea level rises at a much quicker rate than expected."	Sea level rise data clearinghouses are included in Appendix C. Additionally, the need for improved baseline data and monitoring systems is noted in Chapter 9 (Next Steps).

Name/ Affiliation	Key Topic	Comment	Response
Kimberly Flores, Public Citizen	Monitoring, Research Needs, and Next Steps	"It will be important that the Commission continues to be involved in studies of the California coast, coastal hazards and changes in coastal processes."	Thank you for your comment. The Commission agrees, as stated in the Guidance, that sea level rise science is continuing to be produced, and it is important to update policies and practices based on that science.
Kimberly Flores, Public Citizen	Monitoring, Research Needs, and Next Steps	"Public education programs and efforts to alert coastal property owners to the dynamic and changing nature of the coast will be important. If the proper precautions are not taken, then the beautiful Californian coast, will suffer dramatically. That includes erosion, which can lead to flooding of beaches; wave attacks, and increased storm waves, which can tragically affect locals and visitors."	An active program on public information on sea level rise is included in Chapter 9 (Next Steps).
Kimberly Flores, Public Citizen	Policy and Legal analysis	"...the Marine Life Protection Act should always be in place and executed effectively to keep sea creatures safe at all times. It should also be revised yearly because changes happen and these policies should be updated at all times."	Thank you. This issue is important in coastal management, and it requires work beyond the scope of the Coastal Commission alone. Staff will continue to coordinate with other state agencies on these challenges.
Dan Reineman, Graduate Student, Stanford	Policy and Legal analysis	"Generally, I think the CCC is in a tough spot -- trying to navigate the interplay between protecting private property and public rights and in my own humble opinion, the Coastal Act (and the court) gives the public short shrift in this regard. Alas, I suppose this boils down (or abstracts up) to a much larger philosophical, ethical, and legal debate -- not a debate within the purview of an agency guidance document!"	Thank you for your comment. We appreciate your review of the document.
Dan Reineman, Graduate Student, Stanford	Planning	"It seems as though a principle method for assessing "damage" to recreation areas (in order to set mitigation levels) is based on economic valuation; fortunately, there is a developing literature ("surfenomics") around the valuation of wave resources. My impression is that at present these studies are designed around the value of single surf spots. But spots never exist in isolation -- it is the entire coastal wavescape that is important. In other words, surfers rarely just surf in one place -- if conditions there are not ideal, they'll go to the next place. The value of one wave, then, is relative to the surrounding waves. As soon as you begin to factor in the diminishing marginal value of a spot as it becomes more crowded...well, things get complicated. Another aspect of my work will examine the value of various coastal resources, but not their financial value."	Guiding Principles 14-17 address cumulative impacts and using best available information on resource valuation in mitigation of coastal resource impacts. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships.

Name/ Affiliation	Key Topic	Comment	Response
Dan Reineman, Graduate Student, Stanford	Planning	"...susceptibility of a beach (and perhaps a larger extent, its associated waves) to SLR is not just a function of the rate of sea-level rise anticipated in its particular region of the coast combined with, say, the degree to which the coastal bluff it abuts is armored and able to erode naturally. It is also a function of impacts further afield -- to the local littoral cell through the creation of groins, jetties, harbors, piers, etc, to sediment management through dredging, replenishment, nourishment, etc; and to the watershed, where significant potential future coastal sediment is trapped in dams, catchments and water courses are severely altered, etc. All these factors (and others I probably haven't thought of) combine to influence the type, quality, and adaptive capacity of both beaches and waves. Alas, many of these factors are outside the jurisdiction of a single coastal LCP. To what extent does the Coastal Act enable coordination between local coastal jurisdictions, inland jurisdictions, etc."	Language was added to Chapter 5 (Addressing SLR in LCPs) recognizing that some impacts of sea level rise transcend jurisdictional boundaries. It encourages local jurisdictions to coordinate regionally as appropriate, including taking advantage of opportunities to share resources, research, and information.
Tom Adler, City of Chula Vista, Development Services Dept.	General	"I have read the draft guidelines for sea level rise. The document is thoughtful and well written. My comments are made in an effort to better coordinate a complex issue."	Thank you for your comment. We appreciate your review of the document
Tom Adler, City of Chula Vista, Development Services Dept.	Policy and Legal analysis	"Is this the time to address the disconnect between FEMA FIRM maps and sea level rise? I have been told by FEMA that the rate maps are for an insurance program and therefore they do not want to speculate sea level rise. Page 32 of the draft guidelines begins to show the fallacy of this argument: ' <i>The number of people living in areas exposed to flooding from a 100-year flood is estimated to increase by 67%</i> ' By not providing accurate maps based on science we are in danger of bankrupting the insurance program. FEMA is in the process of updating the California coast mapping right now and is losing the opportunity to identify these areas. Maybe this Draft guideline could be revised to address the issue by saying "For all tidally influenced areas, add 65.76 inches to the FEMA water surface level for a conservative view of what the FEMA map will look like in 2100."	Thank you. This issue is important for addressing sea level rise, and it requires work beyond the scope of the Coastal Commission alone. Staff considered this issue during the revisions to the Guidance and additional discussion of FEMA and FEMA-Commission coordination has been included.
Tom Adler, City of Chula Vista, Development Services Dept.	Adaptation	"The Regional Water Quality Control Board calls silt a pollutant. Under "Establish a Sea-Level Rise planning and research program" (Page 54) I proposed we develop policies to legally allow the sand from our mountains to replenish the beaches as they have since the beginning of time."	The Guidance recommends addressing sediment reuse through Regional Sediment Management Plans, and LCP policies that encourage beneficial reuse of sediment where feasible and consistent with the Coastal Act. Chapter 7 (Adaptation Strategies) includes dam removal and other sediment management options as potential adaptation strategies.

Name/ Affiliation	Key Topic	Comment	Response
Tom Adler, City of Chula Vista, Development Services Dept.	Adaptation	"Page 26, Section 13 speaks to lifetime mitigation measures however, there should be some credit for new subsurface habitat created over the life of the project. For example, dry beach today, once underwater, provides potential eel grass areas."	Thank you for your comment. The evaluation of all types of potential new habitats over the life of the project, including the conversion of habitats over time given sea level rise, is a key part of Step 3 in both the LCP and CDP process. Measures to protect both current and future habitat values given sea level rise is an emerging issue and area of on-going research.
Tom Adler, City of Chula Vista, Development Services Dept.	General	"The document is word heavy and picture light. Might we place some good and bad example graphics to better convey what is desirable behavior."	Pictures and figures have been added where possible.
Tom Adler, City of Chula Vista, Development Services Dept.	Policy and Legal analysis	"With sea level rise, won't the boundary of the tidelands trust move east? Should we set the ground rules now so we can avoid arguments of "Takings" in the future? A dynamic mean high tide line might be too difficult to implement, maybe a sphere of influence type approach in the OPR guidelines for general plans?"	A chapter relating to the legal context of adaptation, including takings and movement of the public trust boundary, has been added to the Guidance.
Matt Stoecker, Stoecker Ecological	Adaptation	"Include language that cites recent USGS and other studies outlying the reduction of sediment transport to the coast due to trapping by dams"	Chapter 7 (Adaptation Strategies) includes adaptation strategies that address sediment management, and the impact of dams on sediment supply.
Matt Stoecker, Stoecker Ecological	Adaptation	Include language that "outlines the inadequate current amount of suspended sediments in the SF Bay to enable coastal wetlands to build up along with predicted sea-level-rise"	As a statewide guidance document, the Guidance is not intended to provide location-specific information. However, sediment management is included in Chapter 7 (Adaptation Strategies).
Matt Stoecker, Stoecker Ecological	Adaptation	Include language "describing how recent dam removal projects around the country have restored sediment transport to the coast and resulted in expanded and enhanced coastal wetlands"	Dam removal is included as a possible adaptation strategy in Chapter 7 (Adaptation Strategies).
Matt Stoecker, Stoecker Ecological	Adaptation	"Include policy recommendations that promote the safe removal of unneeded dams to restore sediment transport to the coast as a long-term and sustainable solution to the sea-level-rise crisis"	Dam removal is included as a possible adaptation strategy in Chapter 7 (Adaptation Strategies).

Name/ Affiliation	Key Topic	Comment	Response
Damian Schiff, Pacific Legal Foundation	Policy and Legal analysis	<i>[Summary of main points]</i> Principal presupposition of draft guidance is that CA landowners do not have the right to protect their private property from SLR, other hazards. [e.g. pg 24 - provision that structures be modified, relocated etc. when threatened by SLR, hazards; pg 51, 54 - new development must be safe without SPD, waiver of rights to future SPD, recommendation for local governments to prohibit bluff retention and other SPD for new development]. Contend that these recommendations are based on erroneous interpretations of the Coastal Act and other state/federal Constitutions.	As stated in the Executive Summary and Introduction of this document, this is guidance not regulation, and Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. Chapter 7 (Adaptation Strategies), presents a variety of recommended adaptation options that will not be applicable in all situations but should instead be utilized on a case-by-case and location specific basis that takes into account local circumstances. The Guidance acknowledges that the Coastal Act allows construction of shoreline protection for existing structures when statutory criteria are satisfied. New development, however, must comply with Coastal Act and LCP requirements, including requirements to minimize geologic and flooding hazards.
Ray Ramos, Public Citizen	Policy and Legal analysis	Pg 20, re: takings: "It seems that this guidance document could and should provide information/guidance related to the situation where SLR may reclaim or take back property, and what tools might be available to local LCP authorities. Minimally, it would seem appropriate for this guidance document to make referral to how property ownership may be impacted by SLR."	A chapter relating to the legal context of adaptation, including takings and movement of the public trust boundary, has been added to the Guidance.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Policy and Legal analysis	(Re: a California States Land Commission staff report on SLR and Sovereign Boundaries quoted in comment letter ' <i>...Regardless of whether human activity contributes to the increased levels of greenhouse gases in the atmosphere, which in turn contributes to climate change and an increase in the rate of the rising sea levels, the increase in the rise of the sea remains in the eyes of the law gradual and imperceptible- sea level rise, even taking into account the increase in the rate of the rise, while measureable over periods of years, it still not noticeable or detectable by the naked eye. As such, the current rubric of statutory law and case law governing coastal boundaries in California's sovereign ownership of its waterways and the uplands along tidal waterways. As has been the case generally throughout California's legal history, coastal boundaries and the State's sovereign ownership should continue to move with ever shifting sands and seas. But Commission staff should continue to analyze each project on a case by case basis, in determining the boundary between the State's sovereign ownership and uplands along California's coastline and tidal waterways.</i> ') "Comment: In the situation where SLR contributes to a reclaiming of land that was in private ownership, it appears the California States Land Commission believes such lands become State of California tidal lands and what was in private ownership become sovereign land of the State of California and not be consider a taking. Would the CCC agree?"	As a general rule, yes, the Commission agrees with the CA State Lands Commission policy and related state and federal laws that public tidelands extend inland to the mean high tide line and that the mean high tide line can move over time due to changing conditions such as sea level rise. A chapter relating to the legal context of adaptation, including takings and movement of the public trust boundary, has been added to the Guidance.
Ray Ramos, Public Citizen	Adaptation	"Your guidance document could also discuss circumstances where appropriate adaptive processes could be used rather than on page 23 indicating: ' <i>An Adaptive management framework involves learning and dynamic adjustment in order to accommodate uncertainty.</i> ' More detail would be more helpful to local governments administering LCPs."	Because the Guidance is intended to be used statewide and give broad guidance applicable to many different situations, Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations. Also, language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Adaptation	<p>"The guidance should recommend Counties adopting a zoning regime to facilitate sea-level adaptation. This zoning regime could feature overlay zones in areas vulnerable to SLR, with the stated purpose of promoting public health and safety. Perhaps the guidance can include some further discussion in reference to zoning and legal taking of property, such as: In a landmark 2005 ruling, the Massachusetts Supreme Judicial Court ruled that a zoning ordinance did not constitute a regulatory taking based on allegations that it prevented the plaintiff from constructing a home and may have reduced the property's market value. The Court upheld the ordinance because it had the clear goal of protecting people and property, left the property owner with many alternative uses, and was applied fairly to identifiable mapped areas. Perhaps the CCC could provide local governments some California case examples. Erosion rates tied to SLR and erosion studies from the USGS and other appropriate agencies could provide the data necessary to implement such zones. The zones could regulate armoring, density, retrofitting, relocation, and preservation to accommodate a variety of adaptation goals. The CCC should consider something like the following SLR overlay zones be included in its guidance:</p> <ul style="list-style-type: none"> • Protection zones. Areas with critical infrastructure and dense urban development, where the locality will permit coastal armoring. Local governments could require that non-structural hardening techniques be employed where feasible. • Accommodation zones. Areas where local governments will limit the intensity and density of new development and require that structures be designed or retrofitted to be more resilient to flood impacts. Such zones could also include existing development. • Retreat zones. Areas where armoring will be prohibited and landowner are encouraged to relocate structures upland through tax incentives, land acquisitions, conservation easement programs, etc. • Preservation zones. Areas where important ecosystems are designated for preservation and restoration to enhance important flood buffers, habitat, or public benefit." 	Chapter 7 (Adaptation Strategies) includes overlay zones and zoning updates as adaptation strategies.
Ray Ramos, Public Citizen	Best Available Science	"The ES indicates that the 2012 National Research Council's Report, Sea Level Rise for the Coasts of California, Oregon and Washington: Past Present and Future, is currently considered the best available science on sea-level rise for California. Will the CCC notify users if there is/are a change(s) in the BAS?"	As stated in the Guidance, the Commission is planning on updating this document as necessary, and providing information about best available science on the Coastal Commission website.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Best Available Science	"Pg 6- GUIDANCE FOR LOCAL COASTAL PROGRAMS ' <i>Step 1. Determine a range of sea-level rise projections relevant to LCP planning area or segment. Local governments should use the best available science</i> '- which is per the CCC the 2012 NRC Report. Does the 2012 NRC Report- in opinion of CCC- provide adequate methodology that would enable local government planning staff to make this determination on their own without the need to retain consultant services?"	The Guidance recommends using the sea level rise projections provided in the NRC report without modification, (except in portions of the state where vertical land motion is significant, as noted in the document). Identifying sea level rise projections should generally not require consulting services; however, conducting a vulnerability assessment may, depending on the region.
Ray Ramos, Public Citizen	Funding	"Pg 20 2013-2014 Funding for LCP updates- Can the CCC provide specific contact information in its text about CCC contacts for local governments and the general public. Are there any grants or funding sources that are recommended by the CCC to support local non-governments organizations that may be involved in supporting local governmental efforts?"	A section on grants and other resources is included in the Introduction. The Climate Ready grant program is not exclusive to local governments and accepts NGO applicants.
Ray Ramos, Public Citizen	Adaptation	"Is it an appropriate course of action to do nothing and let the ocean reclaim property that was previously in private ownership and reverted to state ownership as tidal lands? It would be helpful if the CCC guidance provide more on the let nature take its course option to SLR impacts, such as is indicated in my question above."	Chapter 7 includes a variety of adaptation strategies, including opportunities for managed retreat, removing threatened structures, and converting vulnerable areas to open space or conservation zones. As described in the chapter, these adaptation strategies should be implemented on a case-by-case and location-specific basis, and in a way that fulfills the requirements of the Coastal Act and takes into account local conditions.
Ray Ramos, Public Citizen	Planning	"6. ' <i>Avoid or minimize coastal resource impacts when addressing risks to existing development.</i> ' Shouldn't the guidance say something about when economic considerations might indicate the most prudent course of action would be to do nothing and let nature take its course and cede existing development to the sea?"	Chapter 7 includes a variety of adaptation strategies that should be implemented on a case-by-case and location-specific basis in a way that fulfills the requirements of the Coastal Act and takes into account local conditions.
Ray Ramos, Public Citizen	Policy and Legal analysis	"8. ' <i>Property owners should assume the risks associated with new development in hazardous areas.</i> ' Comment/Question: This CCC guidance should be modified to include existing development- What are CCC thoughts about this?"	Thank you for your comment. Responsibility of property owners is considered in all Commission Actions.
Ray Ramos, Public Citizen	Planning	"12. ' <i>Address the cumulative impacts and regional contexts of planning and permitting decisions.</i> ' Is the CCC suggesting the need for a regional lead agency? If yes, why not be more explicit and make it a CCC recommendation? Where littoral cells or watershed are not well researched what guidance does CCC give on how should LCP and LSP accommodate such realities?"	Because the Guidance is intended as broad, statewide resource, it is not intended to provide location-specific detail on potential partnerships. Additionally, collaboration may only be appropriate for certain regions or topics. Therefore, the Guidance recommends identifying opportunities for regional collaboration on a case-by-case basis, especially for the purpose of sharing information and resources or leveraging existing studies. The Coastal Commission will continue to work with local governments and regional coordination efforts.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Planning	"Pg 9- GUIDANCE FOR COASTAL DEVELOPMENT PERMITS Based on CCC experience are most local government staffs capable of performing in accordance with the CCC LCP and CDP guidance or would they need additional training or new staff? If no, could the guidance provide some suggestions as to training sources and new staff background education?"	The Introduction describes grant programs available to local governments to support this work. Appendix C (Resources for Addressing SLR) and Appendix E (Funding Opportunities for LCP Planning and Implementation) also contains many resources for local planners. Commission staff intend to conduct trainings and workshops as needed after finalization of the Guidance.
Ray Ramos, Public Citizen	Funding	<i>"16. 'Consider conducting vulnerability assessments and adaptation planning at the regional level.' Questions/Comment: How would the CCC participate in such efforts? Does the CCC have grant funds or know where local governments can apply for funding to conduct vulnerability assessments and support adaptation planning and adaptation capital projects? For the San Francisco Bay Area would the CCC consider the Association of Bay Area Governments (ABAG) the most logical candidate to be a lead Agency? If not, then what agency would the CCC suggest? Would the CCC recommend a lead State Agency over a regional organization for the San Francisco Bay Area? Does the CCC have some model adaptation plans that it would recommend?"</i>	The Introduction and Appendix E (Funding Opportunities for LCP Planning and Implementation) include a description of the grants available at the time of the Guidance's publication. Additionally, as stated in the Guidance, the Coastal Commission will continue to coordinate with state, regional, local, and other organizations on efforts to address sea level rise. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, including work specific to the Bay Area. Coastal Commission staff is available to discuss regionally-specific projects and/or refer interested parties to appropriate contacts.
Ray Ramos, Public Citizen	Adaptation	"Comment: I would recommend that the CCC guidance document include text indicating the relationship and overlap between Greenhouse Gas Reduction (typically the focus of Climate Action Plans) and Adaptation planning. You might consider including Figure 2 on page 23 included in the Draft California Climate Adaptation Policy Guide prepared by the California Emergency Management Agency and the California Natural Resources Agency April 2012. Adaption strategies seek to reduce vulnerability to the projected changes to climate and increase the local capacity to adapt."	The Introduction notes the importance of reducing greenhouse gas emissions. However, while reducing greenhouse gas emissions is an important aspect of addressing climate change, the intention of this Guidance is to specifically provide assistance for addressing sea level rise in California. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution for dealing with sea level rise and climate change. However, the Commission recognizes that broader challenges that remain, and will continue to work with state and local partners to support efforts to address these challenges.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	General	"Pg 32 CONSEQUENCES OF SEA-LEVEL RISE FOR COASTAL RESOURCES AND DEVELOPMENT Indicates ' <i>The replacement value of property at risk from sea-level rise for the California coast is approximately \$36.5 billion (in 2000 dollars, not including San Francisco Bay)</i> ' Why was the San Francisco Bay area excluded? The San Francisco Bay area should be included (particularly in that the San Mateo County coastal and bay areas are amongst the most highly nationally projected impact areas). I refer you to the recent (9 December 2013 Conference entitled "Meeting the Challenge of Sea Level Rise in San Mateo County (Sponsored by Congresswoman Jackie Speier in conjunction with Assemblyman Rich Gordon and Supervisor Dave Pine) at the College of San Mateo.	The San Francisco Bay was not included because it is outside of the Coastal Commission's jurisdiction. The SF Bay Conservation and Development Commission is responsible for coastal zone planning and permitting within SF Bay and the recently adopted SF Bay Plan addresses sea level rise issues specific to SF Bay.
Ray Ramos, Public Citizen	Adaptation	"I recommend the CCC consider the following for possible inclusion in its guidance: 'Shoreline protection is most effective and less damaging to natural resources if it is the appropriate kind of structure for the project site and erosion and flood problem, and is properly designed, constructed, and maintained. Because factors affecting erosion and flooding vary considerably, no single protective method or structure is appropriate in all situations. When a structure is not appropriate or is improperly designed and constructed to meet the unique site characteristics, flood conditions, and erosional forces at the project site, the structure is more likely to fail, require additional fill to repair, have higher long-term maintenance costs because of higher frequency of repair, and cause greater disturbance and displacement of the site's natural resources.'"	Language was added to Chapter 7 (Adaptation Strategies) with additional detail.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Adaptation	<p>"Pg 50 - 51 4.1 <i>Planning and Locating New Development- What should updated development standards include</i>: General Comment: The CCC guidance upfront expand the following to include redevelopment in existing developed areas and not just as is given on page 51: • <i>Update inventory and maps</i>: The LCP update should include an updated inventory and map of all lands uses, clearly showing areas vulnerable to sea-level-rise. • Update land use designations and zoning ordinances: For those areas that become (or are) in hazardous due to sea-level rise, establish hazard zones or overlays and update land uses and zoning requirements to minimize risks from sea-level rise. • Convert vulnerable areas to conservation or open space sites: This could use some wordsmithing so it makes it clear that this be a focus for undeveloped areas, but that developed area should also be considered given it's economically reasonable to acquire the property. If not economically reasonable then disclosure of the vulnerability needs to identified and the acquiring party placed under deed restrictions that are prudent. • Limit or prohibit use of bluff retention or shoreline protection for new development. I recommend that local government also be provided guidance on how to handle restrictions on existing properties that constitute a hazard from a bluff and/or shoreline protection basis. • Ensure that current and future risks are assumed by the property owner."</p>	<p>Adaptation strategies specifically related to redevelopment have been included in Chapter 7. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.</p>

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Adaptation	<p>"Pg 52 - 54 4.2 Hazards and Shoreline/Bluff Development • Incorporate sea-level rise into calculations of the Geologic Setback Line: What about existing properties that already have less than the needed bluff setback to structures' Does the CCC intend to make it a requirement for a licensed Geotechnical Engineer or an Engineering Geologist to complete the reports or is this guidance only a suggestion to local governments? • Increase setback requirements: Will the report by Geotechnical Engineer or an Engineering Geologist include a recommended setback? If the project is a redevelopment project of an existing development and there is insufficient setback distance what guidance does CCC give to local governments • Establish a transfer of development credits program: This would seem a good idea if local governments have the means to make it possible. • Develop or update shoreline management plans to address long-term shoreline change due to sea-level rise: This seems a good idea if local governments have the means (competent staff and/or resources to augment staff with consultant services. Can CCC help? • Establish a beach nourishment program and protocols: This will require a good understanding of local coastal littoral zone, planning, and available resources to enable nourishment. This should also be incorporated into regional adaptation planning that should be under a regional lead agency- would the CCC agree?"</p>	<p>Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. Projects will continue to be evaluated and reviewed on a case-by-case basis and adaptation strategies should be implemented in a way that fulfills the requirements of the Coastal Act and that accounts for local conditions. A section on the need for regional coordination has been added to Chapter 5 (Addressing SLR in LCPs). Commission staff will continue to work with local governments to provide training and support for the implementation of this Guidance.</p>
Ray Ramos, Public Citizen	Policy and Legal analysis	<p>"Pgs 55 - 56 4.3 Public Access and Recreation • Require mitigation of any unavoidable impacts: What would the CCC guidance be if such mitigation constitutes a legal taking of property or development rights? Would this be an obligation of local governments? • Incorporate sea-level rise into a comprehensive beach management strategy: Some local government have management agreements with the California Parks Department for operating State owned beaches, would the State of California be primarily responsible for having a comprehensive beach management strategy that local governments would be expected to follow if they manage the beach for the State of California?"</p>	<p>A Chapter on the legal context of adaptation planning has been added to the Guidance. The Commission will continue to coordinate with other state agencies with roles in sea level rise planning.</p>

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Funding	"Pgs 57- 58 4.4 Coastal habitats (ESHA, Wetlands, etc.) • Update requirements for coastal habitat management plans: Does the CCC expect to <i>or</i> already has funding mechanisms (such as grants) that will incentivize local governments to accomplish this, and does the CCC have a model plan that it can refer local governments to as a reference guide?"	Chapter 7 presents a number of strategies for addressing impacts to natural habitats. Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the Introduction and Appendix E (Funding Opportunities for LCP Planning and Implementation) for information regarding grant opportunities and to the appendices for resources for addressing sea level rise impacts to coastal habitats. Additional research needs related to wetland impacts and living shorelines are included in Chapter 9 (Next Steps).
Ray Ramos, Public Citizen	Adaptation	"Pg 148 APPENDIX C. ADAPTATION MEASURES- There are other agencies that develop a separate Adaptation Plan guidance document. Is the CCC anticipating developing a document dedicated to adaptation management and planning?"	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Ray Ramos, Public Citizen	Best Available Science	"Will the CCC update SLR BAS on a regular cycle in the future (if yes, what would that cycle be?) and provide notice to users of the Policy Guidance?"	The Commission is planning on updating this document as necessary, and providing information about best available science on the Coastal Commission website.
Ray Ramos, Public Citizen	Planning	"I would suggest that the Executive Summary include wording that connects SLR, climate change, adaptation planning for the purpose of protecting public health and safety within California's coastal zones and those areas impacted by Climate Change as related by SLR. There are coastal areas, such as the San Francisco Bay which is in the jurisdictional area of authority of the BCDC. I would be helpful to know how the CCC and BCDC coordinate shoreline management policies to integrate SLR climate change mitigation and adaptation policies within a regional SLR impact area."	The Executive Summary and Introduction explains the Coastal Commission's relationship with other state agencies and the interconnectedness of climate change, sea level rise, and human health and safety.
Ray Ramos, Public Citizen	Planning	"Additionally I would recommend that the Executive Summary provide highlight discussion on (1) adaptive management; (2) the need for specific scientific research to include funding (particularly grants) and technical support that is available to city LCP planners; and (3) a lead agency or task force, charged with initiating statewide adaptation planning to facilitate coordination and collaboration among various agencies and stakeholders be established, if not already existing. Is there a contact person/department at CCC that the public can contact by telephone/e-mail regarding SLR and Climate Change issues, if other than Hilary Papendick?"	The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7. Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government. Language has also been added emphasizing the need for continued funding and technical support for local governments.

Name/ Affiliation	Key Topic	Comment	Response
Ray Ramos, Public Citizen	Planning	"Has the CCC considered what the economic impacts of this guidance would be on local governments and has an opinion as to local government ability to perform under the CCC policy guidance?"	The cost of sea level rise planning is acknowledged throughout the Guidance, and the Introduction and Appendix E (Funding Opportunities for LCP Planning and Implementation) describes grant programs and resources currently available to local governments. Also, in many cases, the costs of NOT adapting to sea level rise will be greater than the costs of adapting.
Cal OES	General	"Page 8, 65 and 81. Some of the boxes within the flowchart are not connected by arrows."	Figures have been updated throughout the document
Cal OES	General	"Page 4, 16, 18 and 89. Reference to Cal EMA needs to be changed to California Governor's Office of Emergency Services (Cal OES)."	Change was made as suggested.
Cal OES	Monitoring, Research Needs, and Next Steps	"Publicizing of the impact maps referred to in this document could assist with planning and public awareness of the threat."	Appendix C (Resources for Addressing SLR) contains a number of existing vulnerability assessments (including maps) and SLR mapping tools. The Commission will continue to support efforts to share relevant maps and information as it is produced.
Cal OES	Adaptation	"Page 161. Include information for the CA Adaptation Planning Guide (APG). 'The Adaptation Planning Guide (APG) provides guidance to support regional and local communities in proactively addressing the unavoidable consequences of climate change. It was developed cooperatively by the California Natural Resources Agency, California Governor's Office Of Emergency Services, with support from California Polytechnic State University–San Luis Obispo, and with funding through the Federal Emergency Management Agency and the California Energy Commission. The APG provides a step-by-step process for local and regional climate vulnerability assessment and adaptation strategy development.' http://resources.ca.gov/climate_adaptation/local_government/adaptation_planning_guide.html "	The APG is already included; Staff updated description to reflect language in this comment.
Cal OES	General	"Page 161. Include information for the 2013 California Multi-Hazard Mitigation Plan (SHMP). 'The 2013 SHMP represents the state's primary hazard mitigation guidance document, and provides an updated and comprehensive description of California's historical and current hazard analysis, mitigation strategies, goals and objectives. Innovative features of the California hazard mitigation plan include an expanded discussion of climate change and adaptation strategies, a new and expanded section on volcanic hazards in the state, as well as significant mitigation initiatives, strategies and actions completed since adoption of the 2010 SHMP.' http://hazardmitigation.calema.ca.gov/plan/state_multi-hazard_mitigation_plan_shmp "	Change was made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
Cal OES	General	"It should be noted that sea level rise of 5 to 6 feet as outlined in the document could affect the following State of California agencies and commissions: State Lands Commission; Dept. of Boating and Waterways; Dept. of Fish and Wildlife; Dept. of Parks and Rec; Dept. of Water Resources; SF Bay and Boating Commission; Univ. of CA; Dept. of Transportation...; Dept. of General Services; Dept. of Agriculture..."	The Guidance references a number of other state agency efforts in the introduction and in Appendix C (Resources for Addressing SLR).
Cal OES	Planning	"Section IV; Step 4; pages 49 -63. This section discusses Planning and Locating New Development, Hazards and Shoreline/Bluff Development, and Public Access and Restriction. The section details the components of updated development standards. There is no mention of land planners working with and sharing information with local partners (Emergency Managers, Law, Fire, etc.). A bullet expressing the importance of collaboration and information sharing between these agencies is critical."	Change was made as suggested.
Cal OES	Planning	"Section V; Step 3; pages 71-76. Similar to previous comment - Under New Development and Public Access and Recreation, it is important to include a bullet for land planners to work with and share information with local partners (Emergency Management, Law Enforcement, Fire, etc.) as they identify potential risks from hazards for new development and public access and recreation."	Change was made as suggested.
Cal OES	Planning	"The guidance anticipates that Local Coastal Programs (LCP's) will incorporate the guidance principles in their planning and permitting processes. There was no apparent time frame for these revisions, which could add significant costs to local governments."	The Commission recognizes that updating LCPs is a time-consuming and potentially costly exercise. However, updated LCPs that address SLR are essential for ensuring a resilient coast. The Introduction describes grants available to support local governments and includes a number of informational resources that can streamline the planning process.
Cal OES	Planning	"Local Hazard Mitigation Plans (LHMPs) may be impacted by this guidance, with the same additional local government impacts noted above; therefore it is recommended that LHMPs be reviewed and coordinated throughout the LCP planning/update process. Suggest adding language reflecting this review/coordination in related sections within the Guidance. *See pages 9, 12, 20, 64-65, 88-89, and 119 for possible insertion points."	Language on sharing information between LCPs and LHMPs has been added to Chapter 5 (Addressing SLR in LCPs).
Cal OES	Planning	"Page 9, 10, 11, 14 and 62. Include projects impact to critical infrastructure from SLR to relevant sections on noted pages. For example, add to the statement "Determine how the project may impact coastal resources and critical infrastructure considering the influence of future sea-level rise upon the landscape." Page 90 is the only place this is mentioned in the Guidance."	Step 3 of the planning process addresses the impacts of project plans to coastal resources, which includes critical infrastructure. Therefore, implicit in the planning process is the consideration of project impacts on existing critical infrastructure. Additionally, Guiding Principle #15 addresses the need to consider cumulative impacts and regional context of planning and permitting.

Name/ Affiliation	Key Topic	Comment	Response
Cal OES	Planning	"The increased planning and analysis required for a Coastal Development Permit called for in the guidance could significantly delay or prevent individual residential and small-business recovery in low-lying coastal areas after a disaster, whether or not the disaster was Sea-level change (SLC) related."	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the coastal zone. Projects will continue to be reviewed on a case-by-case basis. Projects related to recovery from natural disasters will continue to be reviewed under the relevant sections of the Coastal Act.
Cal OES	Policy and Legal analysis	"Page 6, 24, 51, 54. 'Property owners should assume the risks associated with new development in hazardous areas' would require property owners to 'internal risk' and make them responsible for modifying, relocating, or removing their development if threatened in the future by SLC. This would seem to have significant impact to insurance requirements, mortgages, and disaster recovery.' It has been Cal OES' experience that this policy doesn't work very well in other geologically hazardous areas. What usually happens is the entity claims they were not properly warned about their potential vulnerability. What may be useful is a program similar to the State's Special Studies Zone Act which regulates development in known active fault zones. Before a building permit can be issued in one of these zones, a study must be conducted to determine if an active fault lies beneath the proposed structure. What this also does is help refine the mapped location of these faults providing a localized view of a more regional hazard. In this way, the more regional Sea-level rise map could be better portrayed for local use."	Thank you for your comment. Efforts are made through such actions as deed restrictions to ensure that property owners are aware of potential risks, and such actions are recommended in Chapter 7 (Adaptation Strategies). Additionally, maps of local vulnerabilities are a recommended product of the LCP planning process outlined in Chapter 5 (Addressing SLR in LCPs) and site-specific hazard studies, submitted in support of a Coastal Development Permit, become public information and can be used by local government to augment its hazard mapping and analysis.
Cal OES	Policy and Legal analysis	"The same sections noted above allow deed restrictions requiring property owners to 'waive the right to any future shoreline protection.' Again, this would seem to impact insurance, mortgage, and disaster recovery, including possible restrictions on Emergency Protective Measures commonly used by governments to stabilize flooding in emergency situations."	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the coastal zone. Projects will continue to be reviewed on a case-by-case basis. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Coastal Commission will work with related agencies to address these challenges as they arise.
Cal OES	Planning	"We are not sure how this process works, but the Policy Guidance seems to put a great deal of responsibility on the local authorities, who may or may not act in a fashion that meets the risk being experienced by all. Unintended consequences could be created where one key community decides not to follow through in an appropriate manner with their Local Coastal Program, leaving more diligent communities exposed to a hazard. Regional hazard-specific planning might be more effective when feasible."	Guiding principle #15 recognizes and encourages the need to consider cumulative impacts and regional contexts of planning and permitting decisions. Language has also been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government.

Name/ Affiliation	Key Topic	Comment	Response
Cal OES	Policy and Legal analysis	"See page 12 of the document for the statement regarding guidance and not regulation - The Coastal Commission addresses the issue of climate change through a "guidance document" rather than by regulation or by codes and standards. Unless (or until) federal policy on SLR is developed and/or modified, FEMA may not cover the additional costs to improve the facility or structure to meet climate change "guidance" beyond the cost of the repairs necessary to return the facility or structure to its pre-disaster condition. Our local and state agency partners will need to make up the difference."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation
Laura Snideman, City Manager, City of Half Moon Bay	Best Available Science	Discrepancies in SLR projections: "We fully acknowledge that the science of projecting or estimating sea level rise is extremely complex. However there is far too much variation in SLR projections (2000-2030 is between 1.56 to 11.76 inches). This difference of over 10 inches is of such a significant magnitude that it is almost incomprehensible."	A section in Chapter 3 (Sea Level Rise Science), was added explaining why projections are given in ranges and the importance of using scenario-based analysis to plan for uncertain future conditions.
Laura Snideman, City Manager, City of Half Moon Bay	Best Available Science	Discrepancies in SLR projections: "there are discrepancies between Tables 1 and 6"	Updates have been made to the sea level rise tables to ensure consistency throughout the document.
Laura Snideman, City Manager, City of Half Moon Bay	Best Available Science	Discrepancies in SLR projections: "Furthermore, projections beyond 2030...only compound this problem. We do not understand why there are, or is a need for different base year estimates for the same year of 2000."	The table was edited to read "by 2030" rather than "2000-2030" (and similarly edited for 2050 and 2100). The base year for all tables is the year 2000, meaning that the ranges refer to the projected potential sea level rise from the year 2000 to the years 2030, 2050, and 2100.
Laura Snideman, City Manager, City of Half Moon Bay	Best Available Science	Discrepancies in SLR projections: "We have to be cautious about being overly conservative in projecting SLR that forces development and coastal infrastructure further from the shoreline at the expense of those that want to enjoy the coastal environment in accordance with the core principles of the Coastal Act."	A section on scenario-based planning has been added to Chapter 3 (Sea Level Rise Science). The Commission recommends a scenario-based analysis that captures a range of impacts so that it can reveal when sea level rise might become a serious issue. The analysis should help users of the Guidance document make reasonable and informed decisions, based on local priorities, about whether their projects or plans are compatible with the local hazards influenced by sea level rise, and identify the types of adaptation measures that might be appropriate given the local circumstances.

Name/ Affiliation	Key Topic	Comment	Response
Laura Snideman, City Manager, City of Half Moon Bay	Planning	"Complicated Analysis Required in Developing the Local Hazard Condition Analysis: This requires highly technical and specialized analysis. More importantly, these analyses are quite often professionally and scientifically subjective and disagreement among experts will occur. These same disagreements resulting from subjective evaluations currently occur in determinations of habitat and levels of environmental significance. This chronic problem will only continue to get worse with a new plan element and field of analysis in the development of the Local Hazard Condition Analysis."	The Commission recognizes the challenges posed by sea level rise planning and will continue to coordinate with local governments. This Guidance is intended to provide step-by-step processes to help promote consistency, but the Commission understands there will be variability as they are applied to different communities.
Laura Snideman, City Manager, City of Half Moon Bay	Policy and Legal analysis	"Unpredictability in Coastal Commission Certification Process: There is no clear standard of review when determining the adequacy or acceptability in the certification process of coastal amendments. In theory, no one disputes the importance in addressing environmental factors associated with SLR and its impact on resources, development and infrastructure on coastal communities. In practice and in current operation, there is no limit to the amount of information that is requested in the certification process. This extremely time consuming and protracted process will only add an entirely new area of analysis where confusion and disagreements over interpretation between city and Coastal Commission staff will continue to occur in the certification process of Local Coastal Programs and Implementation Plans"	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis. CCC staff intends to work with local governments and applicants to apply the Guidance to specific CDP applications or LCPs.
Laura Snideman, City Manager, City of Half Moon Bay	Planning	"Fiscal Impacts are significant: Staff time and resources, and especially those of small communities like ours, are already constrained and heavily impacted in administering our Local Coastal Program. We have placed nearly full time emphasis in completing the certification process for several critically important and long overdue LCP amendments. The SLR policies will increase the amount of staff time and effort that will need to be devoted to the certification process, adding further delay to the backlog."	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the introduction for information regarding grant opportunities.

Name/ Affiliation	Key Topic	Comment	Response
John Robertson, Public Citizen	Best Available Science	"The oceans may rise by 55 inches, or then again - they may not raise more than 8 inches by 2100. And they might even fall if the world cools down a bit. The climate does change after all - the question is, what drives it? Ask the Mayans why their climate changed 1200 years ago with the end of the Medieval Warm Period and wiped them out? They don't know, and neither does anyone now know. It is all theories. So, the projected sea level raise, has it been consistent for the past 100 years? 8 inches in 100 years? Has the rate changed in the past ten years? Projections are simply best guesses by incomplete computer models that can't predict weather patterns past ten days. How on earth can they predict the climate in 1, 10, 20, or 90 years? The money is better spent on pollution abatement, clean water, inexpensive electricity, and other immediate uses and let the future will take care of itself. Put it this way, 100 years ago - would planners have anticipated air travel as a vector in spreading disease? Air conditioners as a major user of electric power? We can't possibly guess what will happen in the future. Deal with today's problems first."	Many of the problems associated with sea level rise, such as flooding and erosion, are problems that communities are facing now and best available science indicates that global climate change will have increasingly significant impacts on California and its coastal environments and communities. The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities. The Commission recognizes the challenges posed by uncertainty in the sea level rise projections. For the near future (out to 2030), confidence in the global and regional projections is relatively high, but uncertainty grows larger as the time horizon of the projection is extended forward. The actual sea level rise value for 2100 is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report, but a precise value cannot be specified with high confidence. Projections can be refined in future decades as we continue to gather additional sea level rise and vertical land-motion data from tide gages, satellite altimetry, and GPS surveys, and as long-term trends become clearer. A section on scenario-based planning and how to use this to address uncertainty has been added to Chapter 3 (Sea Level Rise Science).
Lwagner, Public Citizen	Best Available Science	"This just doesn't make 'SENSE'. Your report makes many false assumptions based on now discredited IPCC reports. The ice caps are growing, worldwide temperatures are decreasing, US CO2 is back down to 1992 levels, we can't do anything about Chinese and Indian CO2 emissions. The world's foremost sea level rise expert totally disagrees with your "alarming" assessments. Dr. Nils-Axel Morner should be a major player in your assessments and planning. So the only conclusion that I can come to is that your assessment makes 'CENTS' - lots of them! As Al Gore says "Follow MY Money!"	Best available science indicates that global climate change will have increasingly significant impacts on California and its coastal environments and communities. The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities. The recommended sea level rise projections are consistent with the recommendations of the Ocean Protection Council.
Daniel Debrunner, Public Citizen	General	"A.5.1 on page 115 gives various SLR from NOAA (e.g. 8 feet), but provides no timescale, thus the figure is meaningless. Please add a timescale."	Staff noted in A.5.1 that the projected SLR is for the year 2100.

Name/ Affiliation	Key Topic	Comment	Response
Daniel Debrunner, Public Citizen	Best Available Science	"To add context to Table 1 on page 5 add a graph similar to this one, showing how the NRC projections relate to actual measurements from tide gauges. [email comment includes a graph] Basically, almost halfway through the first projection period (2000-2030), the actual measured rise is at the very low end of the NRC projection. And this is from a projection that was released in 2012, 4/10's into the period."	Chapter 3 (Sea Level Rise Science) presents information explaining recent sea level trends. In the past 15 years, mean sea level in California has remained relatively constant, and has been suppressed due to factors such as offshore winds and other oceanographic complexities. As the Pacific Decadal Oscillation, wind, and other conditions shift, California sea level will continue rising, likely at an accelerated rate (NRC, 2012, Bromirski et al., 2011, 2012). All of the latent sea level rise might occur quickly, providing sea level conditions consistent with the future projections. The actual sea level rise value for any year projected by NRC is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report. As a precise value cannot be specified with high confidence, the Commission recommends scenario planning, which is described in Chapter 3.
Daniel Debrunner, Public Citizen	Best Available Science	"Page 124 has these functions: South of Cape Mendocino • Upper Range – Sea Level Change (cm) = $0.0093t^2 + 0.7457t$ (Equation B-3) • Lower Range Sea Level Change (cm) = $0.0038t^2 + 0.039t$ (Equation B-4) Where “t” is the number of years after 2000. Using the upper range function for the years 2001-2013 give figures that are 3.8 to 4.3 times too high for San Francisco, with the error increasing as time increases. Given that the error is increasing as time increases, how can anyone have any confidence in this function?"	Chapter 3 (Sea Level Rise Science) presents information explaining recent sea level trends. In the past 15 years, mean sea level in California has remained relatively constant, and has been suppressed due to factors such as offshore winds and other oceanographic complexities. As the Pacific Decadal Oscillation, wind, and other conditions shift, California sea level will continue rising, likely at an accelerated rate (NRC, 2012, Bromirski et al., 2011, 2012). All of the latent sea level rise might occur quickly, providing sea level conditions consistent with the future projections. The actual sea level rise value for any year projected by NRC is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report. As a precise value cannot be specified with high confidence, the Commission recommends scenario planning, which is described in Chapter 3.

Name/ Affiliation	Key Topic	Comment	Response
Daniel Debrunner, Public Citizen	Best Available Science	"Page 125 says, ' <i>The NRC projections stop at 2100 and provide no guidance for extrapolation of the range of sea-level rise projections past that time.</i> ' and (the 38 footnote) ' <i>2.6 – 7.5 meters of sea-level rise over the next 2,000 years.</i> ' Current SLR is 2mm/year. NRC projection is 16.7mm/year at the high end, 2.6 - 7.5 meters over the next 2,000 years is 1.3 to 3.7mm/year. Q1) How can you reconcile the peak estimate of 3.7mm/year with the NRC projection of 16.7mm/year?"	The study by Levermann et al. (2013) referenced in the comment is meant to provide one example of a prediction that goes beyond the year 2100. This study uses very optimistic assumptions for global warming. The NRC projections reflect non-linear sea level rise over time as a function of steric and ocean conditions, ice loss rates, and vertical land motion. The actual sea level rise value for 2100 is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report, but a precise value cannot be specified with high confidence. Guidance on projections of sea level rise beyond 2100 is provided in Appendix B. Projections can be refined in future decades as updated science reflects additional sea level rise and vertical land-motion data from tide gages, satellite altimetry, and GPS surveys, and as long-term trends become clearer.
Daniel Debrunner, Public Citizen	Best Available Science	"On page 17 it states, ' <i>The [NRC] projections also only provide estimated sea-level rise ranges through 2100, although sea level will continue to rise at an accelerating rate beyond the end of the century.</i> ' Q2) On what is this assertion of "accelerating rate" beyond this century based? Any scientific reference? Especially since on page 125 it states the NRC provide ' <i>no guidance for extrapolation ... past 2100</i> '."	The sentence in question (on page 30 in the draft document) has been revised to note that acceleration is likely but not certain, as described in the IPCC 5 th Assessment Report. While the NRC report does not project past the year 2100, Appendix B lists other resources to assist in estimating sea level rise for a project life expected past 2100. Regardless, it is critical that long-range planning efforts and projects with long design lives include provisions to revisit SLR hazards periodically, and to make adjustments as new science becomes available.
Daniel Debrunner, Public Citizen	Best Available Science	"Q3) Note 38 on page 125 (see above) gives a peak SLR of 3.7mm/year, this is a reduction in rate compared to the NRC projections, so this contradicts the assertion accelerating rate, in fact it is a decreasing rate. Does this need to be corrected?"	The study by Levermann et al. (2013) referenced in the comment is meant to provide one example of a prediction that goes beyond the year 2100. This study uses very optimistic assumptions for global warming. The NRC projections reflect non-linear sea level rise over time as a function of steric and ocean conditions, ice loss rates, and vertical land motion. The actual sea level rise value for 2100 is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report, but a precise value cannot be specified with high confidence. Guidance on projections of sea level rise beyond 2100 is provided in Appendix B. Projections can be refined in future decades as updated science reflects additional sea level rise and vertical land-motion data from tide gages, satellite altimetry, and GPS surveys, and as long-term trends become clearer.

Name/ Affiliation	Key Topic	Comment	Response
Daniel Debrunner, Public Citizen	Best Available Science	"Page 3, the first two sentences of the Executive Summary state, ' <i>Climate change is upon us, and almost every facet of California's natural and built environment is being affected. Increasing global temperatures are causing significant effects at global, regional, and local scales.</i> ' Can you provide to me and add to this document: 1) a list of facets of California's natural and built environment that are being affected by climate change, 2) significant effects in California (regional/local scale) that are due to increasing global temperatures. Please include the increase in agriculture due to increase CO2 in the atmosphere."	Best available science indicates that global climate change will have increasingly significant impacts on California and its coastal environments and communities. The IPCC Fifth Assessment Report (2013) provides a global picture of climate change science to date, with contributions of over 800 scientists. The NRC 2012 report presents the regional sea level rise projections and is considered the best available science at this scale. The references section in the guidance provides these references and many more to describe the impacts of climate change on California's coast. The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities.
Daniel Debrunner, Public Citizen	Best Available Science	"Figure 8 on page 113 has incorrect maximums for NRC projections: South of Mendocino shows above 2m but Table 1 (page 5) states 1.65m. North of Mendocino shows above 1.5m but Table 1 (page 5) states 1.43m. Please validate all the other values shown, in case similar errors have been made for the other projections."	Figure 8 of the Draft Guidance has been updated.
Daniel Debrunner, Public Citizen	Best Available Science	"Section A.4.1 (page 110) states: ' <i>Because drivers of climate change and sea-level rise, such as radiative forcing, are known to be changing, this method is no longer considered appropriate or viable in climate science.</i> ' Provide a reference for this assertion. Given that a extrapolation of historic trends seems to be outperforming all other projections in accuracy, it seems rash to dismiss this methodology. The climate model projections are using the climate models that are not modelling the climate accurately, almost all are running hotter than the planet. Thus why should they result in accurate SLR projections? This document needs to include information about how the climate models are currently failing and that you are relying on projections based upon these models. Even the IPCC is backing away from the climate models: http://wattsupwiththat.com/2014/01/09/the-ipcc-discards-its-models/ "	As stated in the Guidance, there are strengths and weaknesses to each approach to modelling sea level rise, and users of any sea level rise projections should recognize that there is no perfect approach for anticipating future conditions. The Guidance identifies the NRC 2012 report as the best available science on sea level rise in California. A section on using scenario based planning to address uncertainty has been added to Chapter 3 (Sea Level Rise Science).

Name/ Affiliation	Key Topic	Comment	Response
Richard Wright, Public Citizen	Best Available Science	"I fear the Coastal Commission is "stuck in the ice" on the issue of sea level rise, much like the Russian research ship that became stuck in the Antarctic Sea Ice, during the Antarctic summer, in late December, 2013. The leader of that group depended upon computer models that forecasted the melting away of the Antarctic Sea Ice, and upon the IPCC's conclusions in multiple reports that the Antarctic Sea Ice must be declining over time. The leader erred in not checking the current data about the actual sea ice conditions in the Antarctic, data which was easily available by simply googling for it. This data indicated that the 2013 sea ice was at record levels for the entire satellite era. Further, other ships in the area had already experienced problems within a few weeks of the fateful journey. This real world information was ignored."	Best available science indicates that global climate change will have increasingly significant impacts on California and its coastal environments and communities. The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities. Climate change planning considers long-term change rather than short term weather and oceanic conditions.
Richard Wright, Public Citizen	Best Available Science	"I recommend that the introduction to the Executive Summary be changed to include the following statement from the Economist magazine: ' <i>OVER the past 15 years air temperatures at the Earth's surface have been flat while greenhouse-gas emissions have continued to soar</i> '."	Chapter 3 (Sea Level Rise Science) presents information explaining recent sea-level trends. Tide gauges and satellite observations show that in the past century, mean sea level in California has risen 20 centimeters (8 inches), keeping pace with global rise. In the past 15 years, mean sea level in California has remained relatively constant, and has been suppressed due to factors such as offshore winds and other oceanographic complexities. As the Pacific Decadal Oscillation, wind, and other conditions shift, California sea level will continue rising, likely at an accelerated rate (NRC, 2012, Bromirski et al., 2011, 2012).
Richard Wright, Public Citizen	Best Available Science	"I also recommend that the historical California tide station data be presented prominently in the report. This data should be the primary basis for discussing the risks of sea level rise to the California coast."	The NRC 2012 report synthesized the best available science at the time, including historical tidal records for California. Chapter 3 (Sea Level Rise Science) discusses the tidal record for California. The NRC 2012 report is the basis for discussing the risks of sea level rise to the California coast, in agreement with the Ocean Protection Council's recommendations for statewide sea level rise planning.
Richard Wright, Public Citizen	Best Available Science	"Finally, I recommend that the Coast Commission distance itself from computer gaming studies, that time has shown have repeatedly exaggerated the amount of sea level rise that has occurred."	The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities. The recommended sea level rise projections are consistent with the recommendations of the Ocean Protection Council.

Name/ Affiliation	Key Topic	Comment	Response
Richard Wright, Public Citizen	Best Available Science	[paraphrased] The Guidance seems to contradict the following [excerpted from comment letter]: "OVER the past 15 years air temperatures at the Earth's surface have been flat while greenhouse-gas emissions have continued to soar." "The Scripps tide station recorded its peak sea level measurements in the early 1990s and the late 1990s. Subsequently, the sea level measurements have dropped down to a lower 21st Century level..." "The lack of correlation between a steadily rising CO2 release, and a decline in sea level in the first and second decades of the 21st Century, falsifies the Global Warming hypothesis which claims that CO2 is the primary driver of global temperatures and sea level rise."	Chapter 3 (Sea Level Rise Science) presents information explaining recent sea level rise trends. The IPCC 5th Assessment Report states that it is "extremely likely that that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together" and that "Warming will continue beyond 2100 under all RCP scenarios except RCP2.6. Warming will continue to exhibit interannual-to-decadal variability and will not be regionally uniform."
Steve Matarazzo, City Administrator and Community Development Director, City of Sand City	Planning	"The Sand City Local Coastal Program (LCP) has existing policies designed to address sea level rise as part of natural hazard mitigation for land use purposes. Land Use Policy 4.3.5 of the Sand City LCP specifies, in part, that geologic reports are required for all new development within the coastal zone. Those reports must address coastal bluff and beach erosion, and storm wave and tsunami inundation risks. In addition, the City of Sand City requires that a report (December 2003) by the Geotechnical & Coastal Engineering firm of Haro, Kasunich & Associates be used to estimate the 50-year coastal erosion setback line, also required in our LCP. The methodology to establish this 50-year line includes an estimation of sea-level rise based on: (1) the best available science; and (2) local conditions. This type of methodology is consistent with the draft policy guidance in the subject report."	Thank you for your comment.
Steve Matarazzo, City Administrator and Community Development Director, City of Sand City	Planning	"'Local conditions' would be vastly improved in regard to reducing coastal erosion if commercial sand mining were eliminated in the region."	Thank you for your comment. Chapter 7 (Adaptation Strategies) presents a variety of adaptation options that address increased erosion and sediment dynamics. These strategies should be considered on a case-by-case and location-specific basis and implemented based on local priorities and goals.
Richard Sandzimier, Director, OC Planning Services, Orange County	Policy and Legal analysis	"The word "policy" is used in the title which lends itself towards interpreting the intent as something other than guidance."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and CDPs will continue to be reviewed on a case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
Richard Sandzimier, Director, OC Planning Services, Orange County	Planning	"We concur with the statement, ' <i>It is important the various State efforts are closely coordinated and do not conflict, to assure an effective statewide response to sea-level rise.</i> ' (Page 18). We ask that you urge the governor to have a plan in place to coordinate efforts of the State agencies."	The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7. The Introduction includes a section summarizing some of the state efforts to address climate change and sea level rise and acknowledges the Coastal Commission's ongoing efforts to coordinate with other state agencies to ensure that efforts do not conflict.
Richard Sandzimier, Director, OC Planning Services, Orange County	Best Available Science	"Page 22 reads, 'Simple extrapolation of historic trends should not be used.' The County concurs with this statement; however, little guidance is provided on what criteria or approach to calculation should be used."	The Guidance identifies the NRC 2012 report as the best available science on sea level rise for the state of California. Chapter 3 (Sea Level Rise Science) includes greater description of sea level rise projections.
Richard Sandzimier, Director, OC Planning Services, Orange County	Planning	"Page 24, item B7, reads, ' <i>Account for the social and economic needs of the people of the state and assure priority for coastal-dependent and coastal-related development over other development.</i> ' We believe that Local jurisdictions must maintain the flexibility to establish their own priorities based on the social and economic needs of their residents."	The Guidance recognizes that local decisions, especially with regard to the selection of adaptation strategies, will reflect local circumstances.
Richard Sandzimier, Director, OC Planning Services, Orange County	Adaptation	"Page 25, item C10 includes the following text, ' <i>Maximize natural shoreline values and processes; avoid the perpetuation of shoreline armoring.</i> ' There are several locations within this County's jurisdiction that currently have coastal armoring. Maintenance of these structures will become increasingly difficult and may eventually not be allowed. This could impact public safety as well as both public and private property."	Both maintenance and removal of seawalls are included as possible adaptation strategies in Chapter 7 (Adaptation Strategies), and may be applicable depending on local conditions. Individual projects will continue to be reviewed under Chapter 3 of the Coastal Act or the certified LCP on a case-by-case basis.
Richard Sandzimier, Director, OC Planning Services, Orange County	Policy and Legal analysis	"Page 25, item C10, ' <i>Major renovations, redevelopment, or other new development should not rely upon existing shore protection devices for site stability ...</i> ' and pages 24-25, item B8 requiring a "no future seawall" deed restriction, are statements that severely restrict options for private property owners. It is recommended that: i. The Coastal Commission reviews the practicality of the combined effect of items C10 and B8. ii. The legal authority to require a "no future seawall" deed restriction be reviewed."	A chapter on the legal context of adaptation planning has been added to the Guidance. This chapter also includes a broad array of adaptation strategies that may not be applicable in all situations, but should instead be implemented on a case-by-case basis and in a way that reflects local circumstances.

Name/ Affiliation	Key Topic	Comment	Response
Richard Sandzimier, Director, OC Planning Services, Orange County	Planning	"Page 26, item C12, indicates, ' ... LCP or project should evaluate how sea-level rise impacts throughout an entire littoral cell... ' It is noted that a littoral cell could far exceed the area of an LCP, and likely encompass several local jurisdictions. Requiring such extensive and expansive coastal analysis would be excessive, costly and time consuming."	A section on regional coordination has been added to Chapter 5 (Addressing SLR in LCPs). This section notes that collaboration may only be appropriate for certain regions or topics. Therefore, the Guidance recommends identifying opportunities for regional collaboration on a case-by-case basis, especially for the purpose of sharing information and resources or leveraging existing studies. The Coastal Commission will continue to work with local governments and regional coordination efforts.
Richard Sandzimier, Director, OC Planning Services, Orange County	Policy and Legal analysis	"Page 26, item C13 suggests requiring, '...mitigation of unavoidable public coastal resource impacts related to permitting and shoreline management decisions.' CEQA already requires projects to mitigate their impacts; this would be redundant. Also, it is unclear whether this would preclude or limit a Lead Agency's ability to adopt a Statement of Overriding Considerations for potential future impacts to public shoreline resources. The latter should be clarified and further discussed with local jurisdictions."	Projects in the coastal zone are reviewed under the Coastal Act or certified LCP rather than CEQA. Still, the intention of this document is not to override other related laws.
Richard Sandzimier, Director, OC Planning Services, Orange County	Best Available Science	"Page 29, indicates that the principle of the Sea-Level Rise Guidance document is to use the best available science to determine locally relevant sea-level rise projects for all stages of planning, project design, and permitting reviews. Applicants should use the current, best available science, which the guidance document identifies as the 2012 National Research Council's (NRC) Report. The NRC report contains regional sea-level rise projections for north and south of Cape Mendocino, which may be too broad to include trends in southern California. Bromirski et al. (2011 and 2012) has shown that mean sea level has remained flat over the past 15 years, but indicates other factors may result in future sea level increases. Sea-level rise science continues to evolve and projections should be updated with the release of new scientific reports."	Text was added to Chapter 3 (Sea Level Rise Science) explaining the scientific understanding of why sea level has not changed much in the past 15 years, but is expected to rise in the future. The Coastal Commission recommends using the regional projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use those equivalent sources, in part or in full, provided those sources are consistent with the best available science , peer-reviewed, widely accepted within the scientific community, and locally relevant. As stated in the Guidance, the Commission will provide updates as necessary.
Richard Sandzimier, Director, OC Planning Services, Orange County	Adaptation	"Sea-level rise will result in changes to sediment availability, which could worsen beach erosion and possibly increase the need for beach nourishment projects (Page 31). The County of Orange participates in a recurring beach replenishment project with the U.S. Army Corps of Engineers (Surfside-Sunset Beach Replenishment Project.) This project has been shown to mitigate impacts due to subsidence caused by oil extraction activities. It will become increasingly important that such projects continue, and if sea-level rise accelerates then the recurrence interval of the project may become more frequent."	Beach nourishment is identified as a possible adaptation strategy in Chapter 7 (Adaptation Strategies) of the document. As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Richard Sandzimier, Director, OC Planning Services, Orange County	Adaptation	"It will be difficult to convert areas vulnerable to sea-level rise to conservation areas or open space in heavily urbanized areas such as Orange County. The displacement of people, businesses and structures will result in significant social and economic impacts."	Chapter 7 (Adaptation Strategies) presents a variety of adaptation options. These strategies should be considered on a case-by-case and location-specific basis and implemented in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Richard Sandzimier, Director, OC Planning Services, Orange County	Adaptation	"Page 51 of the document recommends limiting the expansion of non-conforming or other land uses in hazardous areas. It is unclear as to how this addresses hazards; it more so appears to be focused on regulating land use. If it is the latter, the local jurisdictions should retain the flexibility to address land use issue in a manner consistent with their needs and priorities."	By limiting nonconforming uses in hazardous area, planners would reduce exposure of people and infrastructure to coastal hazards, in keeping with the Coastal Act. Still, it is expected that the many adaptation strategies presented in Chapter 7 (Adaptation Strategies) will be chosen and implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Richard Sandzimier, Director, OC Planning Services, Orange County	Policy and Legal analysis	"Page 54, suggests the requiring of mitigation of impacts to public resources by shoreline structures permitted under the Coastal Act. It is recommended that mitigation cover the life of the structure as a condition of approval. This could be potentially costly to local jurisdictions if this applies to public shoreline structures."	The Coastal Act or certified LCPs will remain the standard of review for projects, including shoreline protective structures and any necessary mitigation. The Guidance recognizes the potentially resource-intensive nature of sea level rise planning and the Introduction lists several grant programs available to local governments at the time of the document's publication.
Richard Sandzimier, Director, OC Planning Services, Orange County	Planning	"Chapter Two discusses how new construction should take into account rising sea levels, and how to avoid future damage when developing an area. Local jurisdictions will be challenged to address both new development and to maintain improvements already in place."	The Introduction lists grants available to local governments to support planning and adaptation, and the Guidance lists many other technical resources. Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions.
Bradley Cleveland, Public Citizen	Best Available Science	"Rapid and slow onset events: While sea-level rise will trigger slow onset events, such as coastal inundation, there are also rapid onset disasters — storm surges and flooding related to extreme storm events — that will be exacerbated by SLR. The draft should distinguish between these two distinct types of events — slow and rapid onset because they may necessitate different or additional steps, as outlined in Section IV, Local Coastal Programs, and Section V, Coastal Development Permits."	A section on storms, extreme events, and abrupt sea level change has been added to Chapter 3 (Sea Level Rise Science).
Bradley Cleveland, Public Citizen	Policy and Legal analysis	"Coastal Commission jurisdiction: There is no reference to the fact that the commissions geographic jurisdiction will change over time as the coast migrates inland in response to sea-level rise. It might be useful for Local Coastal Programs to consider this changing geographic jurisdiction, when the best available science indicates a significant change in the coastline."	Description of shifting jurisdictional and public trust boundaries has been added to a new chapter on the general legal framework for adaption planning.

Name/ Affiliation	Key Topic	Comment	Response
Bradley Cleveland, Public Citizen	Adaptation	"Introduction, p17: The draft states that California has lost '90% of coastal wetlands, and erosion and flooding currently pose risks to many of the remaining coastal ecosystems.' While the introduction references the risks posed by SLR, it fails to mention that coastal communities also have the opportunity to restore old or establish new coastal ecosystems as the coastline changes. Some of these opportunities are listed in later sections, such as Section 4.4, "Update policies to provide for new or restored coastal habitat." But the draft document will be stronger if it highlights potential opportunities, and not just enumerate the threats."	Adaptation Strategies have been moved to Chapter 7 (Adaptation Strategies) and are organized by resource type. Habitat restoration is included in this chapter. Chapter 3 (Sea Level Rise Science) also includes coastal habitats as one of the resources at risk from sea level rise and acknowledges the many important functions those habitats have in the coastal landscape.
Bradley Cleveland, Public Citizen	Adaptation	"Section IV, Local Coastal Programs: Draft language should be strengthen to direct local governments to identify key areas that might be protected by acquisitions, rolling easements, or other means to allow coastal ecosystems to migrate inland in response to SLR. As local governments identify these key areas, they should seek to conserve and restore landscape linkages and connectivity to allow diverse species to migrate to new locations."	Adaptation strategies, including acquisitions and conservation easements, are now included in Chapter 7 (Adaptation Strategies). Rolling easements have been added to this list. It is expected that local jurisdictions will apply these options on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
George White, Planning Director, City of Pacifica	Policy and Legal analysis	"...many of the recommended actions relative to modification of [LCPs] and processing of [CDPs] appear regulatory in nature. How will the Commission and its staff apply and implement these recommended policies absent corresponding local policies and regulations?"	In the Executive Summary and Introduction, the document states that this material is guidance, not regulations. The document is guidance in applying the enforceable policies, but is not in and of itself an enforceable policy. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis.
George White, Planning Director, City of Pacifica	Funding	"Given that developing the appropriate policies and recommendations suggested by the Guidance document will be a time consuming and expensive task for local governments, will the Commission provide additional staff and monetary resources to assist in these efforts? (As a side note, City staff has applied for several grants to cover the cost of adaptation and hazard mitigation plans without success due to the overwhelming competition for these funds) Will additional grant opportunities be available to local jurisdictions for this purpose?"	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the introduction for information regarding grant opportunities.

Name/ Affiliation	Key Topic	Comment	Response
George White, Planning Director, City of Pacifica	Best Available Science	"The draft policies appear to take a one size fits all approach to this very complicated issue. The City is not aware of any area specific studies that have been conducted regarding the potential for sea level rise in and around Pacifica. Will the Commission engage in or support further area specific studies to better understand the science behind sea level rise in Pacifica and other coastal jurisdictions?"	As a statewide guidance document, the Guidance is not intended to provide location-specific information. The Guidance identifies the NRC report as the best-available science on sea level rise in California and recommends using these regional projections. Resources for sea level rise mapping and vulnerability assessments, including the CoSMoS tool used in the Our Coast Our Future project for the Bodega Head to Half Moon Bay area, are included in Chapter 5 and Appendix B.
George White, Planning Director, City of Pacifica	Policy and Legal analysis	"The City has projects in the LCP amendment/CDP approval pipeline that are subject to Commission jurisdiction and final action. How will these projects be affected by the new policies relative to sea level rise? Specifically, will projects be required to retroactively modify applications and/or provide additional analysis relative to this issue? For example the City is in the final stages of a multiyear process to update its General Plan which includes an amendment to the LCP. Will the commission require additional policies, programs and analysis relative to sea level rise for a project of this magnitude that that has been in process for several years?"	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone and will continue to be reviewed on a case by case and site by site basis. Consult closely with CCC staff on how to apply the Guidance to a specific CDP application or LCP. As is the case with other coastal hazards, if SLR presents a concern for Coastal Act resources, these issues will need to be addressed on a case-by-case basis.
George White, Planning Director, City of Pacifica	Monitoring, Research Needs, and Next Steps	"Will the Commission endeavor to meet directly with City staff, property owners and other interested community members to facilitate the implementation of these new policies and assist in understanding the realities of the sea level rise issue in Pacifica?"	Coastal Commission staff intend to conduct trainings and workshops to assist in the interpretation and implementation of this Guidance. The Guidance also encourages users to consult with Commission staff early in their planning processes to address questions and concerns.
Josephine Axt, Planning Division Chief, LA District USACE	Best Available Science	"Sea Level Rise Projections: We concur with the guidance in the use of multiple sea level rise projections as a means to accommodate the uncertainties inherent in the science of sea level rise predictions. However, we recommend that the lower end of the range be set based on continuation of historical trends. This sets a best-case scenario that we feel cannot be ruled out. We also support the use of a median sea level rise scenario in addition to low and high to allow for a more complete assessment."	A section on using scenario based planning to address uncertainty has been added to Chapter 3 (Sea Level Rise Science). This section recommends using low, intermediate, and high projections of sea level rise to understand the full range of possible impacts. Looking only at historic trends will not identify the possible consequences from higher rates of sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Josephine Axt, Planning Division Chief, LA District USACE	Policy and Legal analysis	<p>"Federal Consistency: The draft guidance on page 22 acknowledges the need to address sea level rise in planning and permitting decisions and specifically includes federal consistency decisions. However, this is the only reference to federal consistency. This is an area that requires explicit consideration owing to the unique relationship between the Coastal Commission and various federal agencies that are required to make federal consistency determinations and to seek Coastal Commission concurrence...Our recommendation is that a short section be added to the Coastal Commission's Draft Guidance that recommends that federal agencies seeking concurrence comply with the Coastal Commission Guidance for Coastal Development Permits or its federal equivalent. This avoids conflict between federal and state guidance while addressing the issue."</p>	<p>The language in this section has been updated as follows: "This guidance document is intended to help implement the Coastal Act and LCPs in the context of sea level rise concerns. However, the standard of review for commission actions remains the California Coastal Act or applicable certified LCPs. In particular, the recommendations of this guidance do not constitute "enforceable policies" for purposes of CZMA federal consistency reviews. The enforceable policies for conducting federal consistency reviews will remain the policies of Chapter 3 of the Coastal Act. Also, for federal agency activities, the standard is consistency "to the maximum extent practicable," with Chapter 3, <i>i.e.</i>, federal agency activities must be fully consistent unless existing law applicable to the federal agency prohibits full consistency. See 15 CFR. §§ 930.32 and 930.43(d). However, the Commission looks at sea level rise as one part of determining the coastal effects from an activity through CZMA federal consistency reviews and the use of this guidance by all parties should help determine what those coastal effects may be or how effects from sea level rise may be mitigated. Pursuant to 15 CFR § 930.11(h), implementation of this guidance would not be grounds for an objection (because it is not an "enforceable policy") but it might be one means that "would allow the activity to be conducted consistent with the enforceable policies of the program" in order to avoid an objection."</p>

Name/ Affiliation	Key Topic	Comment	Response
Josephine Axt, Planning Division Chief, LA District USACE	Planning	"Ports The draft guidance describes in multiple locations (pp. 32, 36) potential impacts to ports from sea level rise. We feel that the document overestimates potential impacts. Commercial ports, especially the larger ports located in Los Angeles and Long Beach, are very robust facilities with allowances built in to accommodate future expansion that incidentally provide protection from many of the impacts predicted by the draft guidance. Port infrastructure, for example, is built on land that averages + 15 to + 20 feet mean lower low water (MLL W). This elevation easily accommodates the 5-6 foot current tidal range with room for the maximum sea level rise predictions without flooding. Cargo handling facilities also are overbuilt to accommodate future ship designs providing adequate clearance for sea level rise. Bridges, likewise are built to accommodate vessels larger than currently exist. Bridges that do not are in the process of being replaced now (e.g., the Gerald Desmond Bridge in Long Beach). The Ports of Los Angeles and Long Beach also have only one freshwater input, the relatively short Dominguez Channel that is unlikely to cause flooding problems in the ports."	Language has been added to clarify this section.
Josephine Axt, Planning Division Chief, LA District USACE	Planning	"Impacts to marinas are likewise overstated. Marinas are built with floating docks that adjust to the water level and can accommodate future sea level rise. Shore facilities at marinas, on the other hand, are generally lower than commercial ports and may be susceptible to inundation owing to sea level rise in some of the smaller harbors."	The discussion on ports and marinas is general. While individual marinas may easily accommodate increased sea level rise, the possible impacts should not be overlooked.
Josephine Axt, Planning Division Chief, LA District USACE	General	"ESHA The draft guidance uses the term "ESHA" several times. The term is not defined or spelled out anywhere in the document, including the Glossary. We request that the term be spelled out in first use and defined in the Glossary."	This term was added to the glossary.
Josephine Axt, Planning Division Chief, LA District USACE	Policy and Legal analysis	"II.C.1 0 p. 25: We recommend changing the term "least-environmentally damaging alternative" to "least environmentally damaging practicable alternative" to be consistent with federal law including the Clean Water Act (33U.S.C. 1251 et seq.)."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act will remain the standard of review for projects and other Commission actions, including Federal Consistency reviews, in the coastal zone.
Josephine Axt, Planning Division Chief, LA District USACE	Best Available Science	"Table 15, Appendix C...includes an entry of 6-8 meters as a "Typical Range for CA Coast" for tsunami waves. There is no record of tsunamis this high impacting the CA coast. This figure should be corrected to a level supported by the historical record, more likely in the 1-2 meter range."	The references table has been changed to address maximum amounts as well as more typical amounts.

Name/ Affiliation	Key Topic	Comment	Response
Richard Bell, Manager and Principal Engineer, Water Resources and Facility Planning, Municipal Water District of Orange County	Adaptation	[Summary] Note that the comments pertain in particular to the proposed Doheny Ocean Desal Project to be located along Doheny State Beach. Letter describes some details of the project, examples of what will be needed to protect it from SLR, and coordination with CCC and Dept. of Parks and Rec. Urge CCC to support flexibility in the Guidance to allow for an adaptive management approach that can be staged to protect present and future uses and facilities from SLR. Level of protection should be based on a multi-purpose approach that can be implemented over an extended period of time. Recommend that for defined coastal segments, specific joint agency "master adaptive management plans" be developed for staged protection of adaptation improvements, with design plans developed, approved, and implemented for set target SLR elevations. Concur that timing for such improvements needs to be based on sound science and cooperative inter-agency efforts.	Language has been added to the guidance encouraging creative and adaptive sea level rise planning and regional coordination where appropriate.
City of Santa Cruz	Adaptation	"In general, the Draft SLR Guidance has many valuable recommendations, some of which can be employed quickly to aid coastal communities working to identify vulnerabilities and risks to SLR, as well as recommendations that will aid future planning to address local vulnerabilities and risks."	Thank you for your comment.
City of Santa Cruz	Planning	"The Draft SLR Guidance provides valuable examples of how communities can address SLR but fails to reflect the limitations local municipalities have to implement such measures and does not describe how the state will work with local agencies to improve local capacity to implement sound strategies."	The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7. Language has been added emphasizing the need for continued funding and technical support for local governments.
City of Santa Cruz	Planning	"Other recommendations within the Draft SLR Guidance describe logical direction that can be taken cities in the future, but, as of yet, California lacks much of the site-specific data on risks of SLR and proven examples of the recommended adaptation policies necessary to make local adoption of these measures in LCPs programmatically feasible."	A variety of SLR mapping tools and vulnerability assessments are presented in Appendix C (Resources for Addressing SLR). The complexity of science that informed each of these items is discussed in their descriptions. The Guidance encourages users to leverage existing resources such as these. In the absence of such resources, users can follow the steps laid out in Chapters 5 and 6 (Addressing SLR in LCPs and CDPs) to generate the necessary information about sea level rise hazards and potential future impacts to coastal resources. Grants available to support this work are described in the Introduction and language has been added emphasizing the need for continued funding and technical support for local governments.

Name/ Affiliation	Key Topic	Comment	Response
City of Santa Cruz	Adaptation	"Many of the more innovative policy and response strategies outlined within the Draft SLR Guidance are vague on how such policies could be implemented. Provisions of real-world examples would help illustrate and support these policy recommendations. Such real-world examples are necessary to aid adoption and implementation by local governments. Without examples describing how more complex and dynamic measures can be employed through the cooperative support of State agencies, regional foundations, and local municipalities, most communities will be unable to adequately employ many of these recommendations."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Commission staff intend to provide trainings and workshops as needed, which may include real-world examples of the implementation of adaptation strategies.
City of Santa Cruz	Adaptation	"Some recommendations within the Draft SLR Guidance seem impractical for implementation through LCPs and Coastal Development Permits (CDPs), and a review of the legal parameters of their application is needed (for example, the rezoning of hazard areas or phasing out development and use in certain areas). Recommendations to review land use designations and make revisions based on new SLR projections is an enormous undertaking. We are uncertain how to effectively "update land use designation to limit development within areas subject to hazards" within urban settings like Santa Cruz. Zoning and site restrictions (setbacks of future development) within currently developed communities through CDPs on a case-by-case parcel-level basis will most likely compromise attempts to implement uniform approaches to adaptation along specific segments of the coast."	A chapter on the legal implications of sea level rise planning has been added to the Guidance. Further, the adaptation strategies presented in Chapter 7 are meant as options that should be implemented in a way that reflects local circumstances. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
City of Santa Cruz	Planning	"Finally, beaches, coastal access, coastal wetlands, agriculture, and urban development cannot all be protected equally everywhere, and LCPs should be used to define protection and adaptation priorities, response strategies, and the expected resource implications of selected responses, as well as a regional strategy to manage all coastal resources adequately within defined regions of the coast. While the Draft SLR Guidance defines many of the tools for use by cities, there are no instructions on how to implement a coastal adaptation strategy that does not try to accomplish all objectives equally everywhere."	Chapter 7 (Adaptation Strategies) includes many adaptation measures designed to maximize protection of Coastal Act resources. As described in the chapter, adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Language has also been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government. Also, the Coastal Commission's Local Coastal Program (LCP) Update Guide provides information on prioritizing coastal resource protection.

Name/ Affiliation	Key Topic	Comment	Response
City of Santa Cruz	Planning	"Therefore coastal communities need planning guidelines to develop policies that prioritize certain needs over others for specific sections of the coast. Urban communities will most likely focus on protection of current development while rural areas can better focus policies towards retreat and adaptation. Agreements must be made between local municipalities and State regulatory agencies regarding adaptation and protection strategies appropriate for various locations, and it must be acknowledged that regardless of the actions taken, some coastal resources and services will be lost."	Chapter 7 (Adaptation Strategies) includes many adaptation measures designed to maximize protection of Coastal Act resources. As described in the chapter, adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Language has also been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government.
City of Santa Cruz	Funding	"It is our hope that this document could also demonstrate how the CCC and other State agencies will support local government efforts to prioritize SLR adaptation strategies and implement those strategies effectively through additional financial and programmatic support."	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the introduction for information regarding grant opportunities.
City of Santa Cruz	Planning	"There is little reference to how local governments can participate in regional planning processes, in State forums tasked with vetting such policy ideas, and in defining future roles of State and local partners in implementing adaptation strategies...In addition to providing more detail and examples, we also recommend that greater opportunities be made available for local municipalities to participate in the development of policies and adaptation strategies through the inclusion of local partners in efforts defined within the section termed "Next Steps." Specifically, Goal 3 for Next Steps should include participation by local communities as well as State agencies."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Commission is committed to working with local partners to refine sea level rise planning and adaptation approaches.
City of Santa Cruz	Policy and Legal analysis	"There is little acknowledgement of how the State will reduce regulatory hurdles to those communities that adopt LCP policies which define how they plan to adapt locally to a changed coastline."	The Coastal Commission staff is committed to working with local governments and CDP applicants to facilitate the sea level rise planning process. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
City of Santa Cruz	Planning	"Key actions necessary before local governments can take action to integrate adaptation strategies into LCPs include [<i>many are a review of the above Santa Cruz comments</i>]: 1) State will need to provide additional technical assistance and funding for local municipalities to: 1) evaluate risks and threats, 2) select priority resources for protection (at the detriment to others) within urban and rural sections of the coast, and 3) devise strategies of protection and adaptation measures that reflect local capacities and priorities."	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the introduction for information regarding grant opportunities.
City of Santa Cruz	Policy and Legal analysis	"The State will need to document how Draft SLR Guidance will be used as guidelines (as stated in the Executive Summary) and how future LCP updates and CDP applications will be reviewed based on the local prioritization of adaptation strategies."	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis. It is expected that local governments will select adaptation strategies that account for local conditions and are in line with the policies of the Coastal Act.
City of Santa Cruz	Planning	"The Draft SLR Guidance should include a description of the process that the CCC will take to support local prioritization of adaptation strategies within various sections of the coastline and support LCP modifications that prioritize employment of those strategies within those coastal segments."	As described in the Chapter 7 (Adaptation Strategies), the standard of review of LCP certifications and updates is Chapter 3 of the Coastal Act. Adaptation strategies included in LCPs should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Coastal Commission district staff will continue to work with local governments on the LCP planning process, including prioritizing planning goals.
City of Santa Cruz	Planning	"The Draft SLR Guidance should include a description of the process that the CCC will take to help cities make difficult decisions regarding what resources are priorities to protect within different sections of the coast and define regional approaches to address unavoidable impacts to other coastal resources."	As described in the Chapter 7 (Adaptation Strategies), adaptation strategies included in LCPs should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Language has also been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships.

Name/ Affiliation	Key Topic	Comment	Response
City of Santa Cruz	Planning	"We recommend that the State work with local municipalities to define geographically specific climate adaptation strategies for inclusion in LCP updates and then establish mechanisms to reduce regulatory hurdles (including CEQA) for municipalities charged with implementing those strategies."	Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
City of Santa Cruz	Policy and Legal analysis	"Since SLR adaptation policy and regulation is a relatively new discipline of land use planning, a legal analysis should be completed for the recommended policies and for the programmatic roles and land use changes required to implement these measures."	A Chapter on the legal context of adaptation planning has been added to the Guidance. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Michael Thornton, Sierra Club California	General	"Climate change is the biggest challenge Californians will face in the coming decades. Sierra Club California applauds the California Coastal Commission for taking action on climate change related Sea Level Rise (SLR) now"	Thank you for your comment.
Michael Thornton, Sierra Club California	Planning	"A proactive and systematic approach to addressing the myriad issues that are likely to result from SLR predicted to take place over the next century is essential. The Draft SLR Guidance begins the process of implementing such an approach. However the key to success will lay not only in creating guidance for local and regional development but also in the timely adoption and implementation of forward-looking policies and strategies. These policies and strategies will need to allow our coastal communities to adapt to conditions posed by rising sea levels while at the same time protecting coastal environments."	Thank you for your comment. Additional language has been added to the document emphasizing the urgency and magnitude of the challenges posed by sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Michael Thornton, Sierra Club California	Planning	"We encourage you to continue working closely with local governments to ensure that comprehensive (SLR) policies are adopted and implemented as soon as possible. While working with local governments on adoption and implementation efforts, the Commission's SLR Guidance should emphasize and encourage regional planning and cooperation as the optimum strategy in preparing for SLR."	Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government. As stated in the Introduction, the Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7.
Michael Thornton, Sierra Club California	Planning	"The release of the Guidance Doc presents CA with an opportunity to engage in an important educational process. We Encourage the Commission to engage in a vigorous, dynamic, and sustained public ed and engagement process regarding SLR. This process should emphasize that SLR is a direct consequence of Climate Change."	Coastal Commission staff intends to follow up the release of the final draft of the Guidance with trainings and meetings to facilitate its implementation. Sea level rise science will be included in those trainings.
Michael Thornton, Sierra Club California	Planning	"While education, outreach, and engagement on SLR need to be aimed at traditional audiences such as local and regional decision-makers, planning departments, community leaders, development, and business interests, there must be special emphasis and effort made to target the most vulnerable coastal populations and communities. Outreach and communication efforts for these populations and communities must be designed and implemented so that they are effective. These efforts must be made in ways that are sensitive to the cultural, language, and economic realities of these populations and communities."	Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging local jurisdictions to include topics such as social and environmental justice in the analyses described in the chapter. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges, such as public education, as the state moves forward in sea level rise planning and adaptation.
Michael Thornton, Sierra Club California	Adaptation	"While various strategies and adaptation measures will be necessary, it should not be lost that seriously addressing CC is the single biggest mitigation measure that California can engage in when addressing SLR."	The introduction includes a discussion of the State's wider strategy to address climate change, including both mitigation (reduction of greenhouse gases) and adaptation efforts. The main focus of this Guidance is addressing the impacts of sea level rise through land use planning.
Michael Thornton, Sierra Club California	Planning	"Social equity and environmental justice can be a bottom line value of, and woven throughout the entire fabric of the guidance. The risks and rewards of SLR planning and adaptation must be distributed along equitable lines. A favored group or groups cannot be provided with an inequitable share of SLR protection/benefits at the expense of others who are less powerful and/or affluent."	Language about social and environmental justice has been added to Chapter 3 (Sea Level Rise Science). Language has also been added to Chapter 5 (Addressing SLR in LCPs) encouraging local jurisdictions to leverage the studies done for the sea level rise planning process to include analysis of other important topics, such as vulnerable populations.

Name/ Affiliation	Key Topic	Comment	Response
Michael Thornton, Sierra Club California	Adaptation	"As the SLR Guidance states, reliance on coastal "armoring" should be phased out as a primary method for addressing SLR. SLR guidance implementation must increase "Living Shorelines" and utilize "Green Infrastructure" while transitioning away from coastal armoring (sea walls) and sand replenishment programs. Examples of living shorelines include but are not limited to: restored dunes, kelp, oyster beds, and other natural structures that help lessen storm surges and erosion."	Chapter 7 (Adaptation Strategies) includes a description of "soft protection" such as living shorelines and various natural structures. It is expected that the options presented in this chapter will be implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Michael Thornton, Sierra Club California	Policy and Legal analysis	"SLR Guidance should include provisions that all seawalls are incrementally reviewed and not conditioned to live in perpetuity. An optimal incremental review period for a sea wall would be 15 years. The 15-year provision offers a time certain for permit re-evaluation."	Thank you for your comment; it has been taken into consideration. The review of shoreline protective devices is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Michael Thornton, Sierra Club California	Planning	"Successfully addressing SLR dictates that long-term commitment to the effort be made. In addition to that commitment there must be adequate and sustainable funding dedicated to the process. The CCC should use its public platform to advocate for both of these at the state, regional, and local levels."	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities. Staff recognizes these funding needs and will continue to coordinate with other state agencies and partners on these challenges.
Michael Thornton, Sierra Club California	General	"As stated at the Commission Hearing in Dec 2013, a second draft of the SLR Guidance document will be circulated and a full second round of public comment will be conducted upon completion of the current ones. We applaud the Commission for making this decision. Public participation in the creation of a comprehensive SLR Guidance Document will yield a better final product and help to ensure adoption of the principles and tools contained within it."	The final draft of the Guidance will be posted online for public review approximately one month before the hearing at which it is presented to the Commission. At that hearing, public comments can be given verbally.

Name/ Affiliation	Key Topic	Comment	Response
Michael Cipra, Executive Director, Northcoast Regional Land Trust	Adaptation	<i>[description of importance of agricultural lands]</i> "For over 100 years now many of these agricultural lands have been protected from flooding and tidal inundation by a network of levees and dikes. In the face of rising sea levels, landowner-initiated efforts to rehabilitate and raise these structures are a practical method for protecting agricultural lands. While people will certainly disagree on how long levees and dikes can effectively protect agricultural lands against sea level rise, it appears those structures will provide significant benefits for at least 20 or 30 years or more. Much of the rehabilitation work can be done without armoring the structures-relying on just soil fill-and would therefore be more or less impermanent if future sea levels render the protective structures obsolete. We encourage the Commission to support policies that make it feasible for landowners to easily and affordably protect their agricultural lands, particularly former tidelands, using reasonable practices in the rehabilitation of levees and dikes. NRL T supports the concept of a waiver program or region-wide, programmatic permitting program (such as a consistency determination perhaps issued to the Natural Resources Conservation Service) that clears the way for North Coast landowners to conduct such activities. A successfully implemented program would minimize regulatory compliance costs for landowners and ensure standard practices for minimizing impacts to other coastal resources." (emphasis added)	Geographically-specific adaptation measures will continue to be reviewed on a case-by-case basis and the Coastal Act or certified LCP will remain the standard of review. It is expected and encourage that users will think innovatively as they apply adaptation strategies to their local conditions. Flood barriers, such as levees and dikes, that work to protect agricultural land have been added to Chapter 7 (Adaptation Strategies).
Michael Cipra, Executive Director, Northcoast Regional Land Trust	Policy and Legal analysis	"Agricultural lands should be explicitly identified in the Guiding Principles (Section 2C) as a priority coastal resource that deserves maximum protection, along with public access, recreation, sensitive habitats, and other coastal resources specified in that section,"	Several Guiding Principles have been revised to specifically identify agriculture.
Michael Cipra, Executive Director, Northcoast Regional Land Trust	Adaptation	"the document should recognize the protective value of existing levees and dikes (as it does with natural sand dunes in Section 4.5) and explicitly support policies that make it easy and affordable for landowners to rehabilitate those structures, particularly on former diked tidelands, including the widening of bases where necessary to raise the elevation of dikes, in response to sea level rise"	Maintenance of existing levees and dikes has been added Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Ava Biehn, Student, Piedmont Middle School	Adaptation	"I recommend to preserve open space. Every day we cut down trees and kill living organisms. It might not look like we're hurting the environment now, but in a couple years it will show. We need to have open space to plan trees and living organisms."	The preservation of open space is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Ava Biehn, Student, Piedmont Middle School	Adaptation	"The second thing I recommend is controlling stormwater management...flooding and polluting of the water...really makes you think about the really dramatic changes that are happening to us and the earth"	Thank you for your suggestion. A number of adaptation strategies, including stormwater management, are described in Chapter 7.
Ava Biehn, Student, Piedmont Middle School	Monitoring, Research Needs, and Next Steps	"The third thing I recommend is...monitoring...overall, people can make it so it improves in both monitoring flooding, changes in sea level, erosion rates, and vertical land movement."	The need to develop systems to monitor sea level rise, sea level rise impacts, and the efficacy of various adaptation strategies is included in Chapter 9 (Next Steps). The importance of monitoring is noted in many places throughout the Guidance.
Brina Bodnar, Student, Piedmont Middle School	Adaptation	"I think you should use setbacks. This will push construction back and save many plants and animals."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including setbacks and buffers, which can protect coastal resources.
Brina Bodnar, Student, Piedmont Middle School	Adaptation	"Something else that I think that you should use is dune management. Protecting the dunes will not only save dunes, but many habitats and it will most likely change the sea- rising."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including dune management, which can protect coastal resources.
Brina Bodnar, Student, Piedmont Middle School	Adaptation	"Ecological buffer zones will help with sea-rising and protecting habitats."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including setbacks and buffers, which can protect coastal resources.
Brina Bodnar, Student, Piedmont Middle School	Adaptation	"My last recommendation is to use storm water management. This will not only prevent the water in the ocean [from becoming] polluted, but this will prevent pollution in many other places."	Thank you for your suggestion. A number of adaptation strategies, including stormwater management, are described in Chapter 7.
Carvel Tefft, Student, Piedmont Middle School	Planning	"Climate change is a huge subject that has not been addressed for way too long, we may not be able to take huge steps but we can help take the small ones to slowly adapt to this so real crisis."	The Coastal Commission recognizes that, given the scale of the challenges posed by climate change, solutions will need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global). Land use planning, the focus of this Guidance, is one of many strategies that must be part of the solution. Chapter 7 presents a broad array of adaptation strategies for living with sea level rise that will be implemented on a case-by-case basis in a way that reflects local priorities and goals and within the context of the Coastal Act.
Carvel Tefft, Student, Piedmont Middle School	Adaptation	"One suggestion I have is to have design standard. That means to almost rebuild to make structures higher and stronger, it's an adaptation to a natural disaster that could happen due to climate change."	Updating design standards is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that reflects local priorities and goals.

Name/ Affiliation	Key Topic	Comment	Response
Carvel Tefft, Student, Piedmont Middle School	Adaptation	"Another suggestion is to have soft protection. Soft protection is to give the beach more attention to try to prevent water raise from getting past the beach. Soft protection will help us start at the source and block off the very first step."	Thank you for your suggestion. A number of adaptation strategies, including soft protection, are described in Chapter 7.
Carvel Tefft, Student, Piedmont Middle School	Adaptation	"Another suggestion is to site and design. That's a way to adapt to climate change by knowing where to place buildings and how. This will help protect buildings and houses from climate change."	Updating siting and design standards is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that reflects local priorities and goals.
Carvel Tefft, Student, Piedmont Middle School	Adaptation	"My last suggestion is protection of [ecologically] critical areas and refugia. That is specifically protecting the areas where animals that are on the verge of going extinct. We need to think about this and realize we aren't the only ones that will be affected by climate change."	Protection of ecologically critical area and refugia is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that reflects local priorities and goals.
Connor Tang, Student, Piedmont Middle School	Adaptation	"The first action is beach nourishment and replenishment. If we nourish and replenish the beaches, people may get the sense that a beach is a place to learn about animals and the ecosystems, not just to relax and play."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including beach nourishment.
Connor Tang, Student, Piedmont Middle School	Adaptation	"The second action is to develop a new, green stormwater system. With this, we can use the rainwater to drink water from, water gardens and avoid floods. A permeable road might be the best idea, since it's bigger than the storm drains."	Thank you for your suggestion. A number of adaptation strategies, including stormwater management and green infrastructure, are described in Chapter 7.
Connor Tang, Student, Piedmont Middle School	Monitoring, Research Needs, and Next Steps	"The third and final action is to monitoring the beaches. With pictures or videos of what is going on to the beaches, we can get a sense on why the beach's ecosystem is dissolving or how it is dissolving."	The need to develop systems to monitor sea level rise, sea level rise impacts, and the efficacy of various adaptation strategies is included in Chapter 9 (Next Steps). The importance of monitoring is noted in many places throughout the Guidance.
Derek Simonsen, Student, Piedmont Middle School	General	"I am actually quite worried and afraid of sea level rise and global warming is actually already happening. And what I'm most worried about is what's going to happen in the future."	The Coastal Commission recognizes that, given the scale of the challenges posed by climate change, solutions will need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global). Land use planning, the focus of this Guidance, is one of many strategies that must be part of the solution. Chapter 7 presents a broad array of adaptation strategies for living with sea level rise that will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Derek Simonsen, Student, Piedmont Middle School	Adaptation	"Preserving open space. This means we need to create open spaces for living organisms and to plant trees. Our animals and their habitats are getting destroyed by human pollution and buildings that we are creating on them. We are crushing wetlands and marshes that are typically for organisms."	Preserving open space is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Derek Simonsen, Student, Piedmont Middle School	Adaptation	"The next idea I propose is beach nourishment and replenishment. Most beaches have sea level rise which means the beaches need more nourishment and replenishment of sand to keep the sea level safe and lower to humans or living organisms."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including beach nourishment.
Derek Simonsen, Student, Piedmont Middle School	Monitoring, Research Needs, and Next Steps	"The next idea is monitoring. We need to track sea level and animal adaptation to get an idea what is happening currently and what we need to do ahead of time to save this beautiful planet."	The need to develop systems to monitor sea level rise, sea level rise impacts, and the efficacy of various adaptation strategies is included in Chapter 9 (Next Steps). The importance of monitoring is noted in many places throughout the Guidance.
Dimitri Manolis, Student, Piedmont Middle School	General	"Hopefully this might give you a perspective on the generation that will be left with all of this when it's our job. That's why I believe you should take part in my generation's ideas."	Thank you for offering your perspective. The Coastal Commission recognizes that, given the scale of the challenges posed by climate change, solutions will need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global).
Dimitri Manolis, Student, Piedmont Middle School	Adaptation	"One of my ideas for Shoreline protection was to make them more likely by planting more greens and that would absorb the water that's coming into our coastal lines. That could keep water from destroying wildlife habitat because of sea level rise. I also like this idea because we be adding natural things to our environment that could only do good."	Thank you for your suggestion. A number of adaptation strategies, including stormwater management and green infrastructure, are described in Chapter 7.
Dimitri Manolis, Student, Piedmont Middle School	Adaptation	"My second idea is to use ecological buffer zones. The reason these are good is because they are meant to protect. They also have been used before and turned out successful. There aren't many cons to this either."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including setbacks and buffers, which can protect coastal resources.
Dimitri Manolis, Student, Piedmont Middle School	Adaptation	"My final and third idea is to try to preserve and protect soil and land. This would have to be a community level process though. That is the only con to this if not everyone is in, it will be very difficult to pull off. If we don't preserve rich soil the ocean water may just diffuse into the soil and ruin it all which would be a major problem to crops. So I believe this one is necessary."	Adaptation strategies related to sediment management are included in Chapter 7 (Adaptation Strategies). Saltwater intrusion is also described in Chapter 3 (SLR Science) as one of the major impacts of sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Dylan Bradsby, Student, Piedmont Middle School	General	"If we don't stop polluting the air there will be more water in the future for everyone. We need to limit the stuff we do that pollutes the air. I hope you do something about this because it could mean that a lot more people will die each year from not having water or from the heat in the air."	The importance of reducing greenhouse gas emissions in the wider context of addressing climate change is noted in the Introduction. However, because this Guidance is devoted to SLR adaptation and land use planning, it does not focus on mitigating greenhouse gas emissions.
Dylan Bradsby, Student, Piedmont Middle School	Adaptation	"The second proposal is that we preserve open space. It will not only provide space and homes for nature but will also limit the pollution if there's enough preserved space. This is another important but simple idea to do."	Preserving open space is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Dylan Bradsby, Student, Piedmont Middle School	Adaptation	"Finally the third proposal is that there should be a conservation easement program This will help identify, acquire, and manage areas appropriate for some form of conservation protection. A certain amount of people will look at a certain part of the coast and the other will look at a different part of the area so it will be easy to limit an area's air pollution."	Conservation easement programs are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Dylan Pykett, Student, Piedmont Middle School	Adaptation	"I think the Commission should do the design standards where you establish and implement building structures in buildings to prevent erosion so people can live in their houses safely because it would make us more resilient to the sea."	Hard protection options are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Dylan Pykett, Student, Piedmont Middle School	Adaptation	"I also think that the siting and design was a good idea because it will help us with hazards that the sea level will cause."	Updating siting and design standards is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Dylan Pykett, Student, Piedmont Middle School	Monitoring, Research Needs, and Next Steps	"I also think the monitoring idea was good because it will help us understand where the most hazardous areas will be."	The need to develop systems to monitor sea level rise, sea level rise impacts, and the efficacy of various adaptation strategies is included in Chapter 9 (Next Steps). The importance of monitoring is noted in many places throughout the Guidance.
Ethan Argue, Student, Piedmont Middle School	Adaptation	"One action I recommend to community level planning is to have design standards, because it minimizes the risk of damage from flooding and erosion and increases resilience in case of extreme events."	Updating siting and design standards is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions. The Guidance also encourages regional coordination where appropriate.

Name/ Affiliation	Key Topic	Comment	Response
Ethan Argue, Student, Piedmont Middle School	Adaptation	"Another action I recommend is to have infrastructure-service protection to keep things needed in a community to function."	Thank you for your review of the document. Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies, including options to protect infrastructure. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations.
Ethan Argue, Student, Piedmont Middle School	Adaptation	"I would also recommend is the replenishment and nourishment of beaches. This would put more sand on beaches, so that erosion can be decreased, recreation can be increased, and preserves and enhances the aesthetic and habitat value of beaches."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including beach nourishment.
Hanna Pajt, Student, Piedmont Middle School	Adaptation	"I'm writing to you today to express my personal feelings on how we can adapt to climate change. I feel that we have many different ways to approach the situation, some are better than others, and some just seem more industrial. One example of "industrial ways" is that to "replenish" the shorelines, we need to bring in foreign sand?"	Thank you for your comment. Because the Guidance is intended to be used statewide and give broad guidance applicable to many different situations, Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies, including beach nourishment. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations.
Hanna Pajt, Student, Piedmont Middle School	Adaptation	"The ways I do think will be more efficient and green are, for one, to incorporate the sea level rise in habitat restoration. We need to adapt to the damage, and there is no better way than to accept responsibility, by trying to roll with the punches."	Habitat restoration and "green infrastructure" are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Hanna Pajt, Student, Piedmont Middle School	Adaptation	"Another way to improve our situation is to manage our green stormwater. Using our water in moderation isn't something our world is accustomed to doing, but if we gather all the water we can, and doing it in a green way, there is no reason not to."	Thank you for your suggestion. A number of adaptation strategies, including stormwater management and green infrastructure, are described in Chapter 7.
Ian Joseph, Student, Piedmont Middle School	General	"I am afraid of the flooding that may occur soon will slightly affect our shoreline."	Thank you for your comment. Flooding is an important sea level rise impact that is addressed in the guidance and should be considered in the planning process.
Ian Joseph, Student, Piedmont Middle School	Adaptation	"I propose the idea of hard protection. Although it may restrict some areas of the shore, it will give people the high tide protection they need."	Hard protection options are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Ian Joseph, Student, Piedmont Middle School	Monitoring, Research Needs, and Next Steps	"I also propose that we monitor the tides and patterns of the tides so the hard protection corresponds to the hard protection. Throughout the tide patterns, your commission can adjust to the patterns and build different structures to contain the tide."	The need to develop systems to monitor sea level rise, sea level rise impacts, and the efficacy of various adaptation strategies is included in Chapter 9 (Next Steps). The importance of monitoring is noted in many places throughout the Guidance.
Kieran, Student, Piedmont Middle School	Adaptation	"One of my recommendations is dune protection. It would be able to help shoreline protection. It would be a natural way to protect from flooding. It would hopefully be relatively inexpensive."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including dune management, which can protect coastal resources.
Kieran, Student, Piedmont Middle School	Monitoring, Research Needs, and Next Steps	"For adaptations I would pick monitoring. The commission would be able to check the amount of rise and give warnings for large tides. The commission would be able get data and compare it to other or past tides."	The need to develop systems to monitor sea level rise, sea level rise impacts, and the efficacy of various adaptation strategies is included in Chapter 9 (Next Steps). The importance of monitoring is noted in many places throughout the Guidance.
Kieran, Student, Piedmont Middle School	Adaptation	"My last recommendation is design changing. The commission could have people restructure their houses to be more resistant to ocean flooding. And if you build something new you would be held to a certain standards."	Updating siting and design standards is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Michael M., Student, Piedmont Middle School	Adaptation	"My first recommendation for the California Coastal Commission to take is Preserving Open Space I recommend this because it can help protect the wild and can help reduce greenhouse gasses."	Preserving open space is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Michael M., Student, Piedmont Middle School	Adaptation	"I also recommend the stormwater management I recommend this because if we can keep pollutants out of the water then we can keep icebergs there and make sea level lower."	Thank you for your suggestion. A number of adaptation strategies, including stormwater management, are described in Chapter 7.
Michael M., Student, Piedmont Middle School	Adaptation	"I lastly recommend living shorelines because this can yet again help with keeping coastal habitats and thus protecting the shore ecosystems."	Living shorelines are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Noah Shaffer, Student, Piedmont Middle School	Adaptation	"I think that we need to start a program that we need to rebuild and restore habitats so that we will be able to have wildlife and trees everywhere. I think that we as a community need to rebuild both land habitats and also ocean and streams. We have a major problem in ocean rise and also habitat destruction. If we rebuild the habitats like marshes they will absorb the sea rise so that animals can live in the ocean and we can live on land without it affecting us."	Habitat restoration and "green infrastructure" are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Noah Shaffer, Student, Piedmont Middle School	Adaptation	"We should preserve open land so that animals can live and the hills should be reserved...If we can preserve open land then we can plan for later instead of just building."	Preserving open space is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Noah Shaffer, Student, Piedmont Middle School	Adaptation	"Groundwater management is highly needed because right now the ocean is rising but not fresh water we need a lot of water we are in a serious drought."	Adaptation strategies related to water supply and water quality are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Reece Proctor, Student, Piedmont Middle School	Adaptation	"Ecological Buffer zones are one of the ways I think we could help deal with the rising sea levels. Using these we could protect sensitive oceanic areas."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including setbacks and buffers, which can protect coastal resources.
Reece Proctor, Student, Piedmont Middle School	Adaptation	"Incorporation of sea-level rise in habitat restoration, creation, and enhancement is another way we could cope with the rising sea levels. This would help us "restore" the shorelines"	Habitat restoration and "green infrastructure" are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Reece Proctor, Student, Piedmont Middle School	Adaptation	"Open space preservation and conservation is the third and final method I suggest. This measure involves preservation of land for its ecological or recreational value. It includes prohibiting development and any uses that conflict with ecological preservation goals."	Preserving open space is included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
John Broberg, Public Citizen	General	"Really glad to see a public agency take this seriously. I hope you can make some policy statement that goes to the source of global warming."	The importance of reducing greenhouse gas emissions in the wider context of addressing climate change is noted in the Introduction. However, because this Guidance is devoted to SLR adaptation and land use planning, it does not focus on mitigating greenhouse gas emissions.
Bill McLaughlin, Surfrider Foundation, San Francisco Chapter	Planning	<i>Comments on the document as they relate to the Surfrider campaign to restore the beach in the Sloat Blvd. area of SF; email also notes that the SF LCP is long overdue for an update and that the Ocean Beach Master Plan and the SLR Guidance should weight heavily in the update process.</i> Re: principle 10, pg 25 (maximize natural shorelines and values and processes, and embrace green infrastructure and living shorelines; avoid the perpetuation of shoreline armoring) "We wholeheartedly agree...and believe the current design of the SPUR Ocean Beach Master Plan solution for Sloat embodies these principles. However, one aspect of the guidance that we feel should especially influence the outcome for Sloat is the principle...that states 'if shoreline protection is necessary and allowable, use the least environmentally damaging alternative, incorporate projections of sea-level rise into the design of protection, and limit the time of approval to the life of the structure the device is protecting.' We understand that some amount of traditional armoring may eventually be included in the final permitted project at Sloat. We just believe these principles need to be kept front and center for any protective device that is proposed along the way. In this light, we highly urge the Commission to ensure that the SPUR team considers the alternative of re configuring the Lake Merced tunnel so that it lies in the most landward position possible. Such an option would bring the longest term protection of both the wastewater infrastructure AND our beach from sea level rise. The Commission should know, perhaps most significantly, the preliminary costs of tunnel re-alignment/reconfiguration are close to the cost of armoring the Lake Merced Tunnel in its current place (approximately \$200 million). In the past, the City has rejected Tunnel relocation due to cost. We hope such an argument is now moot. Regardless, we urge the Commission to ensure these facts are considered in the decision making process by our public agencies."	Thank you for your comment. Coastal Development Permits will continue to be reviewed on a case-by-case basis for consistency with the Coastal Act or certified LCP. The implementation of adaptation strategies is expected to fulfill the requirements of the Coastal Act and account for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Inga D, Public Citizen	Adaptation	"Page 50: Aren't most coastal communities affected by salt water intrusion? Is not groundwater extraction the primary cause? I can definitely see how sea level rise will exacerbate the situation but I would think that the Commission would encourage small developments that rely on groundwater resources rather than developments who use municipal water (some depleting that very aquifer, most traveling a long ways, contributing to the depletion of ground water elsewhere.) Small households that rely on wells tend to be the most conscientious of water use. In this case limiting developments that use ground water would probably hurt small land owners and farmers."	Adaptation strategies related to water supply and water quality are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions. The link between groundwater extraction and saltwater intrusion is also discussed in Chapter 3 (Sea Level Rise Science).
Inga D, Public Citizen	Adaptation	"Page 50 and Page 69: 2.1 Erosion. Most people that live along the coast, tend to live in steep areas due to the coastal mountain ranges and do have to control erosion with some sort of protective device. I am not a fan of massive concrete retaining walls, but are there alternatives? In the Americas, Europe, etc. there are reminders of beautiful and well-engineered terraces that have allowed people to practice agriculture in an area that would not support it. In San Mateo county there is a lot of coastal land that is steep, subdivided, and zoned for agriculture. Because of its steepness, the only agricultural activity one could imagine is grazing, but most parcels are too small to graze or if large enough, too expensive for most farmers. If the goal is to support farming on these parcels, there may be a way that land be terraced for small scale agriculture that would not show in the view shed and still be ecologically minded. I am thinking of the Austrian wine valleys, terraced by the Romans in the wee days, and still used to this day or terraces around Mexico City."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options that can protect coastal resources from erosion, such as developing a shoreline erosion management plan and increasing setbacks in siting and design standards. The adaptation strategies presented are not the only options that exist or that jurisdictions are allowed to use, however, and terracing might be appropriate in some situations. Adaptation strategies should be considered on a location specific and case-by-case basis and should fulfill the requirements of the Coastal Act and account for local conditions.
Inga D, Public Citizen	Planning	"page 73-Public Access and Recreation: I am not sure why one should identify ALL public access locations, trails, pull outs, etc on or near a proposed project site. Depending on coastal county, only certain public access roads like HWY 1 or specific pull outs need to be addressed. It definitely makes sense for the new development to show that the access road will not be flooded in future but adding all public vantage points seems like additional burdens placed on an already extensive permitting process."	Vantage points are not currently included in the referenced section. Public accessways should be identified to ensure that protection of accessways and recreational opportunities is maximized. CDPs will continue to be reviewed on a case-by-case basis.
Inga D, Public Citizen	Planning	"Page 62 and page 76-Scenic Resources: Again right now a new proposed project site does not have to be evaluated from ALL public vantage points. Why are all of these being added in relation to sea level rise? Seems to me that this needs to be more specific."	As a Coastal Act resource, scenic resources are necessarily included in this document. Projects will continue to be reviewed for consistency with the Coastal Act or certified LCP on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Inga D, Public Citizen	Policy and Legal analysis	"page 79: It is not necessarily true that elevated development change the scenic quality and visual character of area. A lot of old cabins up and down the coast are built on piers and contribute to the historic quality and visual character of area. Looking at the new projects approved by the CCC I feel that "scenic quality and visual character of area" is often poorly defined. I would like to see better definitions put forth by architects, historians, and urban planners. Much of what constitutes visual character of areas happened long before existence of the Commission. The funk and charm of the California coast was built by renegades, artists, hippies, farmers, miners, and the working class. Most of these people would not be able to pass through the CCC permitting process today."	Definition of "scenic quality and visual character" is outside the scope of this particular Guidance document. Projects will continue to be reviewed for consistency with the Coastal Act or certified LCP on a case-by-case basis.
Inga D, Public Citizen	Policy and Legal analysis	"The CCC permitting is well intentioned but it has created a California coast where only the wealthy can afford to build. The permitting process looks more like a plumbing diagram or scary board game. Looks aside, when one actually adds permit costs, it's prohibitive except for those in the upper economic bracket. This may not be something that seems relevant in a sea level rise report, but since this does add an extra layer of permitting, mapping, fees: have you ever thought of having a more progressive fee structure based on income level?"	Thank you. This issue is important for addressing sea level rise, and it requires work beyond the scope of the Coastal Commission alone. The Coastal Commission recognizes that for particularly challenging issue areas, such as environmental justice issues, additional targeted efforts will be needed, such as funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance.
Inga D, Public Citizen	Policy and Legal analysis	"Not addressed: I would like to see the Coastal Commission take a more proactive role in encouraging off grid and renewable energies. As of now wind power is illegal on coast. Wind power technology is changing rapidly and as long as it's safe for environment, esp. birds, I'd like to see people use it. If "looks" or "seeing" a small wind power turbine from a gas guzzling car on HWY 1 is the only deterrent in permitting then we all need to jump into the next century. Solar and wind is the new sexy scenic view shed."	This issue is important for addressing climate change, but it requires work beyond the scope of the Sea Level Rise Guidance. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation."

Name/ Affiliation	Key Topic	Comment	Response
Bill Weseloh, Weseloh & Young Real Estate Brokers and Land Agents	General	"May I please remind you that the California coastline is approximately 1100 miles in length. While your authority is to oversee access to this treasure, it doesn't seem reasonable or rational to apply your powers to every linear foot of ocean/beach line."	The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities. Land use planning, the focus of this Guidance, is one of many strategies that must be part of addressing climate change. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related work and therefore provides a starting point for planning on the project- or topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Bill Weseloh, Weseloh & Young Real Estate Brokers and Land Agents	Policy and Legal analysis	"TO IMPLY THAT 'MANAGED RETREAT' & PLANS 'TO ABANDON AND REMOVE (BLUFF-TOP) HOMES,' 'LIMIT OR PROHIBIT USE OF BLUFF RETENTION OR SHORELINE PROTECTION FOR NEW DEVELOPMENT' AND 'REQUIRE PROPERTY OWNERS TO WAIVE THE RIGHT TO SHORELINE PROTECTION IN THE FUTURE' are once again overkill and out and out violation of property rights."	A chapter discussing the legal implications of sea level rise adaptation planning has been added to the Guidance. Adaptation strategies should be considered on a location specific and case-by-case basis and should fulfill the requirements of the Coastal Act and account for local conditions.
Bill Weseloh, Weseloh & Young Real Estate Brokers and Land Agents	Policy and Legal analysis	"Long before your creation, property owners paid for the land, built the homes, paid taxes for years and years & have had to TRY AND ENJOY their coast properties while knowing your objective is to eliminate them by natural forces or planned action to 'speed-up' the confiscation"	The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities.
Bill Weseloh, Weseloh & Young Real Estate Brokers and Land Agents	Policy and Legal analysis	"Addressing Sea Level Rise is the next step on a 35-37 year program which will continue the harassment and right to fully enjoy our Beach Front Properties"	The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities.
Bill Weseloh, Weseloh & Young Real Estate Brokers and Land Agents	Policy and Legal analysis	"Please find a program to allow beach front property owners to securely protect their property & develop a plan that ensures their family or heirs a continuing ownership of a valued asset. The only other acceptable program is to purchase these properties at fair market value without adjustment for a limited life span."	Chapter 7 (Adaptation Strategies) includes a wide array of adaptation strategies, including hard protection and acquisition programs. It is expected that these adaptation strategies will be implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Keith Adams, President, Coastal Property Owners of Santa Cruz County	General	"The Draft Sea-Level Rise Policy Guidance reveals the many complexities and difficult choices we face based on future sea level rise."	Thank you for your comment.
Keith Adams, President, Coastal Property Owners of Santa Cruz County	Adaptation	"It is difficult to imagine that a passive approach such as "planned retreat" would be a feasible alternative to protecting the many coastal and low-lying cities in California such as Santa Cruz, Capitola, Newport Beach, Malibu, Los Angeles, and San Diego and those fronting the San Francisco Bay such as San Jose, Palo Alto, Oakland and Sausalito."	Chapter 7 includes a variety of adaptation strategies, including opportunities for managed retreat. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations.
Keith Adams, President, Coastal Property Owners of Santa Cruz County	Adaptation	"There is concern that "green solutions" such as sand replenishment will have little impact against a constantly rising sea level. If we are to protect the vast majority of California residents and cities then permanent defenses such as armoring must be considered. We need to be focused on solutions that best serve the interests of the public and our state. Caution should be taken in instituting increasingly higher hurdles to reaching and implementing these solutions."	Chapter 7 includes a variety of adaptation strategies, including options for both hard and soft protection. It is expected that these adaptation strategies will be implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Additionally, language has been added noting the importance of innovative and adaptive use of strategies over time to address this emerging issue.
Keith Adams, President, Coastal Property Owners of Santa Cruz County	Policy and Legal analysis	"The proposed guideline should also have an equitable balance between private and public lands. The suggestion to "abandon and remove bluff-top homes" and "require property owners to waive the right to shoreline protection in the future" puts an undue burden on California's property owners. These suggestions run counter to the California Constitution which provides "all people...inalienable rights" specifically including "protecting property" (Article I, section 1). Our hope is that the Draft Sea-Level Rise Policy Guidance will benefit all Californians without placing undue hardships on private property owners."	A chapter on the legal context of sea level rise adaptation planning has been added to the Guidance. As noted in Guiding Principle #9, the social and economic needs of Californians should be accounted for in sea level rise planning efforts, along with other goals consistent with the Coastal Act. The Guidance acknowledges that the Coastal Act allows construction of shoreline protection for existing structures when statutory criteria are satisfied. New development, however, must comply with Coastal Act and LCP requirements, including requirements to minimize geologic and flooding hazards.

Name/ Affiliation	Key Topic	Comment	Response
Uri Driscoll, Public Citizen	Adaptation	"Please consider that our agriculture lands particularly in Humboldt County offer a significant and extremely valuable commodity for both our region and the neighboring regions that benefit from our grass raised and organic beef, dairy and other agriculture products. Grazing areas close to the coastal zone are utilized in a way that enhances wildlife habitat and produce revenue. These lands should be protected by maintaining and adding structure to existing levees. The permitting process for maintaining these levees and drainage ditches needs to be made much simpler and less costly for land owners and managers. Currently unnecessary restrictions and costs prohibit much needed repairs."	Maintenance of existing levees and dikes has been added Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Uri Driscoll, Public Citizen	Adaptation	"Additionally many of these levees can be secured using the living shoreline concept suggested in the Draft document. The ability to utilize the most effective vegetation should not be limited to plants that are considered native."	Living shorelines are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be selected and implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions. Similarly, CDPs will continue to be reviewed on a case-by-case basis for consistency with the Coastal Act or certified LCP.
Uri Driscoll, Public Citizen	Adaptation	"Coastal dunes have been eroding at a rapid rate since ammophila removal programs were initiated in the 1990's. The permitting of these projects by the Coastal Commission has contributed to that increased erosion rate. While not considered native the ammophila has given us the benefit of increased accretion and dune topography. It has also significantly benefited coastal wetlands that add biodiversity, stabile access and coastal protection. The ongoing removal of this beneficial vegetation is also in direct conflict with the living shoreline concept that this draft promotes."	Thank you for your comment. Chapter 7 of the document presents a variety of adaptation options, including dune management, which can protect coastal resources. As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis. Commission review of projects includes the consideration of site specific topics that could impact Coastal Act resources.
Uri Driscoll, Public Citizen	Adaptation	"Bayshore habitats in Humboldt Bay also have seen the benefit of a plant considered non native spartina densiflora. This plant has been known to increase shore line height in some cases by 2 to 3 feet. The expensive removal projects are also counter to the living shoreline concepts promoted in the draft plan. This plant will and has proved valuable in decreasing storm erosion and wave fetch effects considerably better than the seasonally dormant native plants. It should also be noted that although not as apparent due to a shorter profile thriving populations of native plants do exist within the spartina colonies much like is seen within the ammophila dunes."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Specific projects will be reviewed on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Uri Driscoll, Public Citizen	Adaptation	"If we are to plan for sea level rise we need to be able to protect our valuable agriculture producing lands by enabling farmers and ranchers easy permitting processes for securing existing levees and dikes. We need to be able to utilize the most effective vegetation available to develop living shoreline habitats regardless of a plants native or non native status."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Specific projects will be reviewed on a case-by-case basis. Chapter 7 of the document presents a variety of adaptation options, including dune management, which can protect coastal resources. As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis.
Laura Hunter, Environmental Health Coalition	Planning	"Many of our members live near San Diego Bay or reaches of its watershed. The issue of climate change and sea level rise are significant to their families and communities. We know that impacts of climate change will hit low income communities first and hardest. Flooding of our neighborhoods in high tide events, where infrastructure investments are lowest, is a key concern if the appropriate planning and early actions are not taken."	This issue is important for addressing sea level rise, and it requires work beyond the scope of the Coastal Commission alone. The Coastal Commission recognizes that for particularly challenging issue areas, such as environmental justice issues, additional targeted efforts will be needed, such as funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance.
Laura Hunter, Environmental Health Coalition	Planning	"...we recommend that the guidance be amended to include clear and proactive requirements to address the presence and use of hazardous materials in areas that could be impacted by sea level rise or other climate related impacts. There are many examples on the Port tidelands, for example, where significant quantities of hazardous materials are stored and used. There needs to be special, proactive planning for these areas to ensure that these materials are not released into neighborhoods or the environment."	Language has been added to Chapter 7 (Adaptation Strategies) regarding the importance of protecting sites with hazardous materials from sea level rise impacts.
Laura Hunter, Environmental Health Coalition	Adaptation	"...we are also concerned about the impacts of sea level rise on many of the natural and recreational areas around San Diego Bay. Loss of these areas is a key concern so we would request any additional proactive measures that the Commission can direct planners to incorporate would be beneficial. These areas are more at-risk and so must be prioritized higher than other uses."	Chapter 7 (Adaptation Strategies) includes many adaptation measures designed to maximize protection of Coastal Act resources, including coastal habitats and access and recreation opportunities. As described in the chapter, adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Laura Hunter, Environmental Health Coalition	General	"We support the approach outlined in the Coastal Commission draft document and urge its adoption with amendments to include specific guidance about hazardous materials and higher priority for natural areas at-risk. The Port District and other planning entities in the San Diego Bay watershed need and will benefit from the clear guidance contained in the Draft."	Thank you for your comment.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Planning	"As stated on page 20, the Draft Guidance is intended for a broad audience and, 'There are many ways to evaluate and minimize the risks from sea-level rise, and Commission staff understands that different types of analyses and actions will be appropriate depending on the type of project or planning effort.' This is a critical statement that should also be included in other parts of the document. Specifically, this type of statement should be included in the descriptions of the step by step guidance on how to address sea-level rise in Coastal Development Permits (CDPs)."	Change was made to Chapter 6 as suggested.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Best Available Science	"there should be an acknowledgment-that the Draft Guidance is not intended to prescribe that all local jurisdictions use specific or identical estimates of sea-level rise as part of their assessments or decisions. A similar acknowledgement is included on page 1 of the State of California Sea-Level Rise Guidance Document where it states, "... the document is not intended to prescribe that all state agencies use specific or identical estimates of SLR as part of their assessments or decisions." Similar to the differing mandates of state agencies, local jurisdictions are not all alike, and have LCPs that are not all alike. There will be variability in the types of analyses and actions by local jurisdictions, and there will be variability in the amount of sea-level rise, within the acceptable range, used in these analysis and actions."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant. As described in the Guidance, analyses and adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Best Available Science	"Table 1, Table 2, Table 3, and Figure 10 should be revised to include more information from Table 5.3 in the NRC, 2012 report. Specifically, the Draft Guidelines should include regional sea level rise projections and ranges relative to year 2000. For example, South of Cape Mendocino the projection for 2100 is approximately 93 centimeters within a range of approximately 42 to 167 centimeters. All these numbers should be included in the tables. Figure 10 should be revised to graph this information in the same way that global sea level rise projections and ranges are represented in Figure 5.6 of the NRC, 2012 report."	Description of the NRC "projections" versus the full range has been added to Appendix A and is referenced in Chapter 3.

Name/ Affiliation	Key Topic	Comment	Response
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Best Available Science	"There are a number of references to the uncertainty associated with current sea-level rise projections, but there is no detailed discussion of the uncertainty represented by the ranges associated with the sea-level rise projections for various time periods. The Draft Guidance should include at least a summary of the uncertainty discussion from Chapter 5 of the NRC, 2012 report included below in its entirety." <i>[see email for NRC language in question]</i>	Description of the uncertainty associated with sea level rise projections as well as using scenario-based planning to address this uncertainty has been added to Chapter 3 (Sea Level Rise Science).
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Best Available Science	"Although scenario-based planning is a way of dealing with uncertainty in the LCP planning process and CDPs, the document should acknowledge that scenario-based analysis must ultimately yield to project design incorporating a certain amount of sea-level rise. For example, the elevation of a structure in a coastal flood zone, or setback of a structure from the edge of a coastal bluff will ultimately be based on a design incorporating a specified amount of sea level rise. The amount of sea level rise to use in project design should be reasonable, and should be updated as necessary based on best available new science."	Sections on scenario-based planning and the idea of planning versus designing for certain sea level rise scenarios has been added to Chapter 3 (Sea Level Rise Science). The choice of a final sea level rise design amount will likely be done on a case-by-case or location specific basis, and will reflect local priorities and risk tolerances.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Planning	The document should acknowledge there will be variability at the local level in terms of LCP policy options and project design standards.	Thank you for your comment; this is addressed in Chapters 5, 6, and 7.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Planning	"The step by step process for CDPs represents in its entirety, a large amount of analysis for individual projects that may not be necessary for every project and may not be feasible for individual property owners to undertake. It should be acknowledged that local jurisdictions may establish simplified processes for specific areas or types of projects that provide the appropriate level of analysis to identify hazards and protect coastal resources. Further, the guidance should take into account the wide range of projects that require CDPs, from, for example, a hotel complex with coastal protection to a small addition to a single family home. These cannot be treated equally by the guidelines."	As stated in Chapter 6, Step 2, not all projects will require the same analyses. Project applicants should work closely with Commission or local government staff to identify the particular analyses needed on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Best Available Science	"Step 1 in the planning process for LCPs and CDPs should recommend using reasonably foreseeable amounts of sea-level rise within the acceptable range. As recommended in the State of California Sea-level Rise Guidance Document (March 2013 update), the ranges of sea-level rise presented in the NRC, 2012 report should be used as a starting place and sea-level rise values should be selected based on agency and context-specific considerations of risk tolerance and adaptive capacity (Recommendation 1). For example, in most cases, it may be reasonable at this time to use medium values equivalent to the actual projection in the NRC, 2012 report. These values can be revised during periodic LCP updates based on best available new science. In future decades the actual sea level rise trend may be consistent with the current projections, or trend closer to the lower or upper ranges associated with the current projections."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant. As described in the Guidance, analyses and adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Additionally, a description of the uncertainty associated with sea level rise projections as well as using scenario-based planning to address this uncertainty has been added to Chapter 3 (Sea Level Rise Science).
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Planning	"Step 3 in the planning process for LCPs should include additional references to development. In the Sensitivity section the first reference to resources should be changed to resource/development. In the Adaptive Capacity section the first reference to resources should be changed to resources/development. In the land Use Planning Options and Constraints section the first reference to resources should be changed to resources/development. Finally, in the Expected Outcomes paragraph the first two references to resources should be changed to resources/development."	Change was made as suggested.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Adaptation	"Step 4 in the planning process for LCPs could include a suggested adaptation measure intended to provide guidance when existing development along the coast becomes a public nuisance through a hazardous condition or impact on coastal resources. The purpose of such an adaptation measure would be to provide a clearly defined process for dealing with geologic and environmental hazards, and abatement of dangerous buildings in the coastal zone."	The Coastal Act authorizes local governments to exercise their police power to abate nuisances. The Guidance currently recommends that permits for new development in potentially hazardous locations should include a condition requiring removal of the development if it becomes threatened.

Name/ Affiliation	Key Topic	Comment	Response
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Adaptation	"Additionally, the Draft Guidance should include a suggested adaptation measure similar to Strategy 2 in the Ocean and Coastal Resources section of the State of California Adaption Strategy: Provide Statewide Guidance for Protecting Existing Critical Ecosystems, Existing Coastal Development, and Future Investments. Local communities could initiate a similar strategy that would build on community-level or regional mapping of resources, development and potential future investments. The strategy should include an acknowledgement that it may be futile and environmentally destructive to try to protect everything. Cost-benefit analyses should be framed so that all public and private costs and benefits are appropriately considered. The strategy should address key questions, as listed in the State Adaption Strategy, for helping to prioritize, design, and locate proposed or existing structures that may be threatened by sea level rise. The questions should address health, safety, and welfare of the community, alternatives analysis, and impact on coastal resources."	Chapter 5 (Addressing SLR in LCPs) outlines a process for identifying local risks and vulnerabilities and developing and implementing a variety of adaptation strategies. A number of adaptation strategies are described in Chapter 7. In both chapters, it is noted that adaptation strategies should be implemented in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
David Carlson, Resource Planner, County of Santa Cruz Planning Department	Funding	"Step 5 in the planning process for LCPs advises local governments to identify technical assistance and pursue funding and partnerships necessary to support LCP updates to address sea-level rise. This step should include a similar statement that the California Coastal Commission should assist in identifying these technical assistance resources and funding opportunities and partnerships, as well as providing direct funding opportunities. Step 5 should include a statement similar to the statement included in the Principles for Addressing Sea-Level Rise in the Coastal Zone in the section on maximizing agency coordination (D.15)."	Thank you for your comment. The Appendices include a wealth of information for technical resources and partnerships. Information on funding and support was reorganized in the document and is now found in the Introduction and in Appendix E. Language has also been added to the document emphasizing the need for continued funding and technical support for local jurisdictions.
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Planning	"The SLR Policy Guidance document states that it works with other agencies and documents such as the General Plan Guidelines which are currently in draft form. Since our Local Coastal Program Land Use Plans (LUPs) are our community plans (part of the Land Use Element of our General Plan) we strive for internal consistency in implementing a variety of State policies and expect that documents and policies coming from multiple State agencies will be compatible with each other so local jurisdictions are not left trying to carry out conflicting State policies or laws. The GP Guidelines draft is not currently posted on the State website so we will be looking for consistent direction between State documents when we are able to review the GP Guidelines."	Thank you for your comment. The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7.

Name/ Affiliation	Key Topic	Comment	Response
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Policy and Legal analysis	"We would appreciate understanding how CEQA legislation or Guidelines might change based on the adoption of this Guidance document"	The Coastal Act provides the standard of review in the Coastal Zone, not the California Environmental Quality Act (CEQA). Changes to CEQA guidelines are outside the scope of this document.
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Planning	"We have concern about how suggested LCP changes that exclude or limit housing opportunities in the impacted area might be viewed by HCD or other organizations that review the City's capacity and efforts to provide adequate affordable housing. Our concern relates to balancing State priorities and the internal consistency of our General Plan."	The importance of considering other issues, including social justice issues such as affordable housing, has been added to Chapter 5 (Addressing SLR in LCPs). This Guidance does not change the need to consider other laws and local regulations.
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Policy and Legal analysis	"While the Guidance document acknowledges there is no discussion about sea level rise involving property rights and takings, we believe that local jurisdictions are due more assistance on this topic, or at least an issues framework, since every coastal city and county will be dealing with the same responsibilities to some degree."	A chapter on the legal context of adaptation planning has been added to the Guidance to address legal questions.
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Adaptation	"The Guidance document states that different approaches will need to be taken in different areas of the coast. Our highly urbanized community will need different tools that those used along an open portion of the coast. Examples of tools are provided for coastal areas with resource-based characteristics, and we hope that there will practical tools for highly-urbanized areas. The overlay zones that are discussed in the document seem to presume equal results wherever it is used; however a highly-urbanized community may see no change from the application of an overlay. Also, transfer of development rights to other non-impacted properties is often not a viable option in a highly-urbanized jurisdiction."	Because the Guidance is intended to be used statewide and give broad guidance applicable to many different situations, Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies, including strategies related to existing development. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations. Also, Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions.
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Tools	"We are looking forward to be able to access the SCC Southern CA SLR Map Tool which was identified as being "in development" in recent staff presentations."	Thank you for your comment.

Name/ Affiliation	Key Topic	Comment	Response
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Adaptation	"We are also interested in seeing a more developed discussion about the concept of limiting the life of structures in future impact areas since that is a generally unfamiliar concept."	Additional detail was added to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) about the concept of limiting the life of structures in future impact areas.
City of San Diego, Planning, Neighborhoods, and Economic Development Department	Adaptation	"Finally, Section 4.1 entitled Planning and Locating New Development indicates that the section contains recommended LUP language. We believe the section actually contains a significant amount of regulatory language that we would more appropriately consider for inclusion in our Land Development Code rather than in our LUPs. We are concerned that having regulatory language in 4.1 implies that this language could be proposed for inclusion into LUPs by the Coastal Commission staff by virtue of it being in that section. We hope that language in the Guidance document will reflect the Coastal Act and clearly state that a jurisdiction should incorporate policy language in its LUPs to implement Chapter 3 of the Coastal Act, and that appropriate regulatory language to carry out LUP policies should be placed in implementing ordinances (and not in LUPs)."	Adaptation strategies in Chapter 5, step 4 of the draft document are now found in Chapter 7 (Adaptation Strategies). The descriptions of each adaptation strategy are not meant as example policy language. As described in the chapter, adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Heal the Ocean	General	"Heal the Ocean commends the Coastal Commission for recognizing the value of having a specific step by step process for planning and adapting to sea-level rise, and we feel the draft Sea-Level Rise Policy Guidance fills an important need. We are encouraged by the potential for this Policy Guidance to better protect vulnerable WWTPs [waste water treatment plants] to estimated sea level rise in the decades to come."	Thank you for your comment.
Heal the Ocean	Planning	"We have asked the City of Santa Barbara to more seriously address the vulnerability of its WWTP...Given this evidence, and the usual length of the planning process, we have advised the City that it needs to take immediate, specific steps to address the risk of inundation of its WWTP."	Thank you for your comment. Staff recognizes that for particularly challenging issue areas, such as waste water treatment plants and other critical facilities at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance, etc.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Ocean	General	"We are pleased to see that the Coastal Commission has made it clear throughout the document that the vulnerability of critical coastal infrastructure in California, especially WWTPs, is serious. We think it's appropriate that WWTPs are used as examples in the Draft Policy Guidance to illustrate effective planning for sea level rise in Local Coastal Plans (LCPs) and Coastal Development Permits (CDPs). We believe the proactive approach the Commission has taken throughout this Policy Guidance will serve as a model for effective coastal management of sea level rise in California and beyond."	Thank you for your comment.
Heal the Ocean	General	"P. 34: ' <i>Water quality (Section 30231): Coastal water quality</i> '... Heal the Ocean appreciates the inclusion of toxic soils and nonpoint sources as a threat to water quality due to flooding caused by sea level rise."	Thank you for your comment.
Heal the Ocean	General	" <i>PP. 34-35: Sea-level rise could also lead to</i> "...HTO supports the discussion in this section of the vulnerability of WWTPs and the threat of discharge of untreated sewage to water quality."	Thank you for your comment.
Heal the Ocean	General	" <i>P. 43: Consider coastal development and resources, including</i> '...'Critical infrastructure such as wastewater treatment plants'...HTO also supports the inclusion of WWTPs as potentially at-risk critical infrastructure that should be considered in LCP planning for sea level rise."	Thank you for your comment.
Heal the Ocean	General	" <i>P. 53: Protect function of critical facilities: Ensure critical facilities are able to function given sea-level rise. Use the upper range of sea-level rise as a minimum for siting and design of critical facilities</i> '...HTO agrees with utilizing conservative sea level rise estimates for siting and design."	Thank you for your comment.
Heal the Ocean	General	" <i>P. 53: Site and design wastewater disposal systems to avoid risks</i> ...We agree with this guidance to ensure the safety of new wastewater infrastructure projects."	Thank you for your comment.
Heal the Ocean	Adaptation	"P. 60: <i>What should the updated water quality section include?</i> ...While we support the elements included in Section 4.6, we believe this section could be improved by the addition of specific adaptation measures for vulnerable WWTPs, like relocating, retrofitting (waterproofing/strengthening), or raising facilities."	This change has been made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Ocean	Planning	<p>"P. 60: Clearly define areas at risk: The LCP should include an updated inventory of potential pollutant sources due to sea-level rise, including toxic waste sites, ocean outfalls and wastewater treatment facilities at risk of inundation, as well as aquifers and wells at risk of saltwater intrusion.</p> <p>Several studies have documented the potential for groundwater levels to rise in tandem with sea levels and exacerbate flood risks. HTO believes LCPs throughout the State should account for this risk of flooding since it poses a dual water quality threat with the potential for flooding of underground infrastructure, like sewer lines, along with the release of contaminants from toxic groundwater sites. In our address to the City of Santa Barbara regarding its Climate Action Plan, we addressed the potential flooding of the City's toxic groundwater sites, and produced an approximate overlay (pictured below) of those sites from the State's Geotracker database along with the City's estimated sea level rise map to illustrate the risk."</p>	<p>The dual risk from rising groundwater levels in tandem with sea level rise has been added as a potential impact to water quality in Chapter 7 (Adaptation Strategies).</p>
Heal the Ocean	Planning	<p>"P. 89: Work with the Department of Water Resources, SWRCB and local agencies to assess and address water and wastewater treatment plant vulnerabilities along the coast. HTO strongly encourages the Coastal Commission to implement this "next step" and work toward greater inter-agency collaboration and guidance on WWTP vulnerability."</p>	<p>Thank you for your comment. As stated in the Introduction, the Coastal Commission is committed to working with state and local agencies on projects related to sea level rise planning. The Coastal Commission recognizes that for particularly challenging issue areas, such as wastewater treatment plants and other critical facilities at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance.</p>
Heal the Ocean	Adaptation	<p>"P. 90: Guidance on managed retreat of critical infrastructure, including when to consider managed retreat rather than continue with repairs and maintenance in light of sea-level rise. We encourage the Coastal Commission to implement this recommendation on guidance for "managed retreat" as quickly as possible. We believe the Santa Barbara region's debate and struggle over the Goleta Beach Park strongly indicates the need for greater direction from the Coastal Commission on managed retreat of not only critical infrastructure, but coastal infrastructure in general. A standardized process for evaluating the need for managed retreat would give local and county governments greater assistance in addressing sea level rise."</p>	<p>More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Coastal Commission recognizes that for particularly challenging issue areas, such as waste water treatment plants and other critical facilities at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance. As described in Chapter 7 (Adaptation Strategies), adaptation strategies should be considered on a location specific, case-by-case basis, and local governments will most likely implement them in a way that reflects local priorities.</p>

Name/ Affiliation	Key Topic	Comment	Response
Heal the Ocean	Adaptation	"PP. 158-159: Table 20. Measures for Water Quality/Water Supply Management. As described above in our comments on Chapter IV, Section 4.6 regarding the importance of adaptation measures for water quality, this table should also include relocating, retrofitting, or raising WWTPs."	Adaptation strategies found in Appendix C of the draft document are now in Chapter 7 (Adaptation Strategies) but the requested change to the water quality section has been made as suggested.
Heal the Ocean	Adaptation	"P. 158: LCPs can include policies that require green infrastructure be used whenever possible in lieu of hard structures. Incorporate sea-level rise and extreme storms into the design. In the face of more intense storms due to climate change, we agree with the Coastal Commission including green infrastructure as a critical adaptation measure to support water quality...We recognize this Policy Guidance is focused primarily on sea level rise, but since Table 20 and other parts of the document address water quality threats from influxes of stormwater into combined sewer systems via green infrastructure, we believe the Commission should include recommendations for LCPs regarding greater infiltration/inflow of rainwater due to climate change. Recommendations could include improved maintenance procedures for public sewer mains, policies to address impaired private sewer laterals, and other proactive measures."	Language was added to the water quality section of Chapter 7 (Adaptation Strategies) to address your comment.
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	General	"We applaud the efforts of the California Coastal Commission (Coastal Commission) to create a Guidance Document that can be used as a resource to help coastal communities prepare for the challenges of sea-level rise. We commend you and your staff for taking proactive steps to address sea-level rise based on the best available science. More importantly, we appreciate your recognition of the importance of involving local land use regulatory agencies to address the consequences of climate change."	Thank you for your comment.
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	Policy and Legal analysis	"we would like to highlight our collective concern that the Guidance Document may be interpreted as a regulatory document in the future."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and Implementation Plans will continue to be reviewed on a case by case basis.
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	Best Available Science	"Additionally, we are concerned that the Guidance Document contains discrepancies in sea-level rise projections..."	Staff updated the NRC tables to ensure consistency throughout the document.

Name/ Affiliation	Key Topic	Comment	Response
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	Planning	"...the highly technical baseline analysis of coastal conditions called for in the Local Hazard Condition Analysis will be costly and time intensive..."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	Policy and Legal analysis	"...there will be unpredictability associated with certifying Local Coastal Plans and Implementation Plans in conformance with these policies..."	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and Implementation Plans will continue to be reviewed on a case by case basis.
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	Funding	"...there will be significant fiscal impacts on coastal communities in complying with these complex regulations..."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.
Mark Wheatley, Chair, Coastal Cities Issues Group, League of California Cities	Policy and Legal analysis	"In conclusion, we respectfully request that the Coastal Commission revise the Guidance Document to clearly state that it is not a regulatory document and will not be implemented as such. In addition, in light of the concerns expressed by coastal cities, and given the important role of local agencies in addressing sea- level rise through land use decisions, we are committed to working with the Coastal Commission to address our concerns. We are confident that the Coastal Commission and local agencies can work together in a collaborative fashion to produce a Guidance Document that can be used as a valuable resource."	In the Executive Summary and Introduction, the document states that this material is guidance, not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and Implementation Plans will continue to be reviewed on a case by case basis. The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7.

Name/ Affiliation	Key Topic	Comment	Response
Kim Prillhart, Planning Director, Ventura County Resource Management Agency	Policy and Legal analysis	"Guidance versus regulations: Greater clarity is needed within the SLR Guidance Document to define its regulatory intent. The guidance was developed using 17 principles intended to guide sea-level rise adaptation efforts. These principles were derived from the Coastal Act and generally reflect the policies and practices of the CCC in addressing coastal hazards. In the absence of sea level rise certified policies in local LCPs, however, it appears that the SLR Policy Guidance has the same degree of authority as the Coastal Act. In our view, the CCC policy guidance should primarily be implemented through the LCP amendment process and should not be prematurely used to condition discretionary projects through the CCC appeal process. [Additional detail on this topic provided in full comment letter]"	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. CDPs and LCP updates will continue to be reviewed on a case by case basis.
Kim Prillhart, Planning Director, Ventura County Resource Management Agency	Funding	"Insufficient Funding: While it is important that the SLR Guidance Document be implemented through the standard LCP amendment process, a lack of funding for that process will create significant implementation delays unless additional funding is made available. [Additional detail on this topic provided in full comment letter]"	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities that are available to support these efforts.

Name/ Affiliation	Key Topic	Comment	Response
Kim Prillhart, Planning Director, Ventura County Resource Management Agency	Adaptation	"New versus existing (or redevelopment) projects: The SLR Guidance Document should more clearly distinguish between policies that apply to existing versus new development, consistent with the Coastal Act. In addition, the SLR Guidance Document should directly address the legal takings issue...At a minimum, the SLR Policy Guidance should be updated to address the following sections of the Coastal Act, which distinguish existing versus new development: Coastal Act Section 30235 states '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.'; Coastal Act Section 30253 states 'New development shall. .. neither create nor contribute significantly to erosion ... or in any way require the construction of protective devices that would substantially alter landforms along bluffs and cliffs.' The difference between Sections 30235 and 30253 are the words "existing" versus "new" development. The Coastal Act requires the Commission to protect existing structures; it does not require the Commission to approve new development placed in a hazardous area...Furthermore, additional specificity in Appendix C, Adaptation Measures, should be included that reflect strategies that the Commission has found acceptable in this context. [Additional detail on this topic provided in full comment letter]"	A section on the legal implications of sea level rise planning has been added to Chapter 7 (Adaptation Strategies). This chapter also includes sections of adaptation strategies that pertain to planning and locating new development and addressing development. Sections 30235 and 30253 of the Coastal Act are both referenced throughout the Guidance Document. The Guidance acknowledges that the Coastal Act allows construction of shoreline protection for existing structures when statutory criteria are satisfied. New development, however, must comply with Coastal Act and LCP requirements, including requirements to minimize geologic and flooding hazards. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Kim Prillhart, Planning Director, Ventura County Resource Management Agency	Policy and Legal analysis	"Expected project life/design life: In our view, this is a complicated issue that should not be defined by the SLR Guidance Document. Other types of hazards (fire, earthquake, etc.) are addressed through the regulatory process without defining expected project life. [Additional detail on this topic provided in full comment letter]"	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide clarity on this issue. However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Kim Prillhart, Planning Director, Ventura County Resource Management Agency	Planning	"Regional Vulnerability Assessments and Adaptation Planning: Except where necessary for critical infrastructure, the SLR Guidance Document should minimize requirements for inter-jurisdictional planning, as such requirements are likely to increase costs and timelines for LCP updates that address SLR. [Additional detail on this topic provided in full comment letter]"	Revisions and additions have been made to sections on regional planning and collaboration. Collaboration is suggested for the purposes of information sharing, leveraging resources, and addressing impacts that will occur across jurisdictional boundaries, but may not be appropriate in all circumstances or for all projects.
Rick Wilson, California Geologic Survey	Best Available Science	"In addition to including sea-level rise in tsunami runup calculations, it should also be considered when evaluating tsunami loads/currents on maritime facilities and coastal structures."	Change was made as suggested
Rick Wilson, California Geologic Survey	Best Available Science	"Suggest a couple changes/additions: 1) make "earthquakes" the first cause of tsunamis and replace "volcanic eruption" (which is not relevant source for tsunamis in California) with "submarine and subaerial landslides" (which is relevant to California); and 2) include mention that tsunamis can cause significant flooding in low-lying coastal areas and strong currents in harbors."	Changes and additions to the Glossary were made as requested.
Rick Wilson, California Geologic Survey	Best Available Science	"Subaerial landslides (slope failures from land into a water body) should be added as a potential source for tsunamis. In addition, it should be mentioned that the number and size of coastal subaerial landslides may increase because of increased coastal erosion due to sea-level rise, which in turn may increase the potential for tsunamigenic landslides along the California coast. "	Language has been added to Chapter 3 (SLR Science) acknowledging the potential for subaerial landslides to increase with climate change, though also acknowledging the lack of research confirming it.
Rick Wilson, California Geologic Survey	Best Available Science	"It should be mentioned that California Geological Survey and California Governor's Office of Emergency Services are creating new tsunami inundation maps based on probabilistic tsunami hazard analysis (reference: California Probabilistic Tsunami Hazard Analysis Work Group, in press, Analysis of probabilistic tsunami hazard analysis in California: California Geological Survey Special Report). CGS is also working with URS to evaluate the impact of sea-level rise on numerical tsunami modeling to verify that an additive approach (tsunami height + SLR) is the appropriate method for integrating SLR and tsunamis inundation together. "	Language was added to Appendix B as requested.
Rick Wilson, California Geologic Survey	Best Available Science	"The "Typical range on the CA Coast" for tsunamis is very arbitrary. By saying it is 20-26 feet, it implies that this is average or "typical"...which it is not. The actual range is more likely inches to 50 feet. Also, the period influence could be "days.""	Changes to the tsunami section of the table have been made.

Name/ Affiliation	Key Topic	Comment	Response
Lisa Brown, Public Citizen	Adaptation	"I am concerned with policies in this document which steer away from the maintenance of existing dikes that protect current infrastructure necessary to the functioning of their small city; regional roads (101 and 255), waste-water treatment; low income development and agriculture."	Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies. These strategies are intended to be considered on a location specific and case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Lisa Brown, Public Citizen	Adaptation	"Living shorelines can and should be used to help keep wetland habitats vital given anticipated sea level rise, it is my opinion that they should be used in conjunction with existing levies as a means to help protect agricultural and human resource values that exist surrounding the bay"	Thank you for your comment. Chapter 7 (Adaptation Strategies) provides a wide range of adaptation strategies, including non-structural adaptation measures such as living shorelines. These strategies are intended to be considered on a location specific and case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Lisa Brown, Public Citizen	Adaptation	"The opportunity for public access to be expanded across the bay area in conjunction with the maintenance of the dikes should not be overlooked."	Thank you for your comment. Guiding Principle #11 calls for providing maximum protection of public access and recreational opportunities even as sea levels rise. Additionally, a number of strategies for protecting access and recreational opportunities are presented in Chapter 7 (Adaptation Strategies). As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis.
Joyce Dillard, Public Citizen	Best Available Science	" <i>This projected sea level rise includes global changes in sea level from thermal expansion and glacial melting, as well as regional changes in land elevation due to uplift and subsidence.</i> Not stated is the authority to determine that the condition exists to make those local decisions, as suggested by this guidance."	Global climate change will have increasingly significant impacts on California and its coastal environments and communities. The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities.
Joyce Dillard, Public Citizen	Policy and Legal analysis	"There is no penalty for retaining outdated plans and no way to reverse decisions based on outdated and insignificant material."	The guidance document recognizes that LCPs are crucial tools for planning for sea level rise. Therefore, the Commission is encouraging LCP certifications and updates through grant programs. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LUPs and Implementation Plans will continue to be reviewed on a case by case basis.
Joyce Dillard, Public Citizen	Best Available Science	"Credibility is not even suggested in this document."	Thank you for your comment. This Guidance cites a number of peer-reviewed studies relating to climate change and sea level rise. The Commission will continue to update best available sciences as new studies emerge.

Name/ Affiliation	Key Topic	Comment	Response
Joyce Dillard, Public Citizen	Policy and Legal analysis	"CEQA California Environmental Quality Act needs to be amended to address issues of Best Available Science to codify the use of applicable data based on facts and data collection and reporting. Modeling can create situations of the imagination because of insignificant data but may be consideration Best Available Science."	The Coastal Commission does not review CEQA or NEPA documents such as EIRs or EISs. The standard of review for Commission actions is the California Coastal Act. In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the sea level rise projections from the 2012 NRC report or an equivalent resource. Other peer-reviewed and well-documented climate science, adaptation strategies, and management practices may be used as equivalent resources. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant.
Joyce Dillard, Public Citizen	Planning	"Sea-level rise should be addressed across more jurisdictions than under the Coastal Act. The General Plan and the required Elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, Safety. Flooding crosses the Elements of: Land Use, Conservation, Open Space, Safety. This guidance needs to incorporate instruction from the Coastal Act and Sea-Level Rise into the General Plan and its Mandatory Elements."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Coastal Commission staff are coordinating with the Office of Planning and Research on the development of updated General Plan Guidelines.
Joyce Dillard, Public Citizen	Policy and Legal analysis	"Other than the courts, there is no process for incorporation of Elements and Guidance or for Federal and State requirements. There needs to be increased involvement with the Governor's Office of Planning and Research into the coordination and execution for local government planning."	The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7. The Introduction includes a section summarizing some of the state efforts to address climate change and sea level rise and acknowledges the Coastal Commission's ongoing efforts to coordinate with other state agencies to ensure that efforts do not conflict.

Name/ Affiliation	Key Topic	Comment	Response
Joyce Dillard, Public Citizen	Planning	"Infrastructure cannot be addressed without current and accurate information of age, capacity, condition and life expectancy. Capital Expenditure Analysis is not required and there should be guidance to anticipate losses."	Updating inventory and maps, including gathering data on age and condition of coastal development has been added to Chapter 7 (Adaptation Strategies).
Joyce Dillard, Public Citizen	General	"The Military has been omitted from this guidance, yet plays a critical role in the defense of this country."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. The Coastal Commission is committed to collaborating with other state agencies, local governments, partner organizations, and others to tackle the challenges of sea level rise, as highlighted in Strategic Plan Goals 3.1.5, 3.1.6, 3.1.7.
Joyce Dillard, Public Citizen	Funding	"Completely lacking in the discussion, is the budgetary condition of State Government and of the Local Governments and their capacity, or lack thereof, of execution."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.
Joyce Dillard, Public Citizen	Best Available Science	"Not all coastal earthquake faults are mapped under those official State and Federal geological agencies."	This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of all local factors. Rather, the guidance provides a starting point for additional planning on the topic-specific level.
Joyce Dillard, Public Citizen	Best Available Science	"Department of Water Resources is now approaching issues around the 200-year storm event."	A section on storms and extreme events has been added to Chapter 3 (Sea Level Rise Science). Additionally, extreme events are reflected in the hazard minimization principles. Coastal Commission staff is committed to coordinating with other agencies and partners in addressing climate change.
Joyce Dillard, Public Citizen	Best Available Science	"Weather and weather patterns should be included in this document, not just Climate Variability."	Language has been added to Chapter 3 (Sea Level Rise Science) about extreme events and storms and how their impacts might be influenced by sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Joyce Dillard, Public Citizen	Planning	"Nuclear disasters and radiation is omitted in this document."	This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of all future environmental conditions or all adaptation options. Rather, the guidance provides a starting point for additional planning on the topic-specific level.
Joyce Dillard, Public Citizen	Planning	"There is no approach to hazardous conditions such as methane migration in areas of oil field activity-current or in the past. The City of Los Angeles sits on oil fields. Many coastal areas are oil fields. Fracking and the conditions of that operation should be incorporated into this document."	This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of all local factors. Rather, the guidance provides a starting point for additional planning on the topic-specific level.
Joyce Dillard, Public Citizen	Monitoring, Research Needs, and Next Steps	"There are no Reporting Centers established for monitoring suggested in this document or any coordination on a State level."	The Commission will continue to coordinate with other state and local agency partners on research and monitoring efforts. The Coastal Commission recognizes that for particularly challenging issue areas, such as regional coordination issues, additional targeted efforts will be needed.
Malcolm Johnson, Graduate Student, Monterey Institute of International Studies	Best Available Science	"The current estimates for SLR, both globally and in California, tend to be more conservative than most scientific estimates (Horton, Rahmstorf, Engelhart, & Kemp, 2014)...I recommend updating the SLR estimates to reflect more liberal predictions, providing some sort of communication mechanism between coastal and inland communities, and making sure that the other impacts of climate change are mentioned throughout the document."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Other peer-reviewed and well-documented climate science may be used as an equivalent resource. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant. This guidance document is part of a larger statewide strategy to respond to climate change, but it focuses on the climate change impact of sea level rise. The Coastal Act supports the consideration of other relevant climate change impacts in decision-making, and the Commission intends to provide guidance on a range of anticipated climate change impacts in the future.

Name/ Affiliation	Key Topic	Comment	Response
Malcolm Johnson, Graduate Student, Monterey Institute of International Studies	Planning	"Some coastal communities have the revenue and the institutional capacity, in the form of employees with coastal management experience, but most lack the resources to go through the lengthy process of updating their LCPs...This brings up the questions of: who should fund the process of updating LCPs? Should the state come up with the resources for communities that can't afford to do so on their own? In order to deal with this issue of scale, I would consider encouraging the regionalization of LCPs, i.e. having cities and counties working together to update plans based on bioregions, watersheds, or beaches "	Thank you for your comment. Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging local jurisdictions to leverage existing resources. Language has also been added to the document emphasizing the need for continued funding and technical support for local jurisdictions. The introduction includes information on available grants to support this work.
Malcolm Johnson, Graduate Student, Monterey Institute of International Studies	Planning	"Another possible solution could be the creation of technical advisory councils, which include organizations like the Center for the Blue Economy (MIIS). These councils could provide a collaborative process utilizing both socio-economic data and scientific research to provide communities (or regions) with suggested updates for LCPs. "	Thank you for your comment. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Malcolm Johnson, Graduate Student, Monterey Institute of International Studies	Planning	"The guiding document does not emphasize the importance of biodiversity, i.e. that ecosystem goods and services depend on healthy biodiversity, which means protection may not be included in the LCPs...A better solution to the developer based CDP process would be precautionary, comprehensive, and adaptive to the changing coastline (Hanak & Moreno, 2012). By limiting the impacts of coastal development, rather than just mitigating the impacts, coastlines will be more resilient and their adaptive capacity will remain intact."	Thank you. Maximizing protection of sensitive coastal resources is part of a guiding principle, as is minimizing coastal resource impacts. Chapter 7 includes a variety of adaptation strategies to protect natural habitats and biodiversity. These strategies should be implemented on a case by case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Monterey County Resource Management Agency	Monitoring, Research Needs, and Next Steps	"These local and regional efforts are important steps to address sea level rise impacts, but to be successful these efforts must be firmly anchored by policy directives agreed upon at the highest levels. The California Coastal Commission's "Draft Sea-Level Rise Policy Guidance" is an important first step in forming this policy directive. From our point of view, the "Draft Sea-Level Rise Policy Guidance" is an appropriate but incomplete response to projected sea level rise. What's missing is unambiguous guidance for existing locales and facilities that play a unique or vital role in California's coastal economy."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Monterey County Resource Management Agency	Adaptation	Recommend revising Principle No. 7: "Account for the social and economic needs of the people of the state; assure priority for <u>development in "Locales of Unique Value," including</u> coastal-dependent and coastal-related development over other development. In planning and project development concerning sea-level rise, assure that the social and economic needs of the people of the state are accounted for in accordance with Coastal Act Section 30001.5 (b), with special consideration for working persons employed within the coastal zone (Coastal Act Section 30001 (d)). <u>Development in "Locales of Unique Value," including</u> Coastal-dependent and coastal-related development may necessarily need to be sited in areas at risk from sea-level rise, and these developments should be sited and designed to minimize risks from sea-level rise and impacts to coastal resources. <u>The California Coastal Commission will support Local Coastal Programs that contain adaptive management strategies for "Locales of Unique Value" and that provide a policy basis for the streamlined review of development that implements such strategies."</u>	Thank you for your comment. Chapter 7 includes a variety of adaptation strategies, which should be implemented on a case by case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions, which may include Locales of Unique Value. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone.
Brian Trautwein, Environmental Defense Center	Adaptation	"A. Consider a shorter development life for constrained lots: We generally support this recommendation in concept, if coupled with a requirement to remove development at the end of the project lifespan. While we like this recommendation, without a requirement to remove the development at the end of its life, this approach may result in future landowners requesting coastal armoring to protect poorly sited development approved with shortened lifespans, either before or after the project life ends. This approach will only work if the Coastal Zoning Ordinance and conditions on the Coastal Development Permit (CDP) prohibit armoring and require removal of the development by a specific date; otherwise the development will not be removed, and will live beyond the shortened lifespan, creating a perceived need for construction of coastal armoring. Instead, Local Coastal Plans (LCPs) should encourage public purchase and conservation easements to avoid the impacts of sea-level rise on coastal resources."	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and in Chapter 6 (Adaptation Strategies). However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Brian Trautwein, Environmental Defense Center	Adaptation	"B. Limit or prohibit the use of bluff retention or shoreline protection for new development; Ensure current and future risks are assumed by the property owner: [T]he Guidance Document should direct cities and counties to adopt policies which require removal of all coastal development at the end of the project life when the development becomes threatened by sea-level rise."	Removal of threatened structures is included as an option in Chapter 7 (Adaptation Strategies). It is expected that these adaptation strategies will be implemented on a case-by-case basis and in a way that reflects local priorities and goals.

Name/ Affiliation	Key Topic	Comment	Response
Brian Trautwein, Environmental Defense Center	Adaptation	"C. Increase setback requirements: The Document recommends that new development be "required to be set back a sufficient distance landward to minimize risks, to the maximum extent feasible, over the life of the structure." (Page 53) Comment – "This statement would more effectively avert the risks and the impacts of sea-level rise on coastal resources if it required the setback distance to be sufficient for the maximum life of the structure or development."	Chapter 7 of the document presents a variety of adaptation options, including setbacks and buffers. These options will likely be implemented on a case-by-case basis in a way that reflects local priorities and goals. This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level.
Brian Trautwein, Environmental Defense Center	Adaptation	"D. Consider a shorter development life for constrained lots; Ensure current and future risks are assumed by property owner: this approach will only be effective at protecting coastal resources if coupled with the requirement that owners remove/relocate their developments at the end of the permitted life, or when such developments become threatened."	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and in Chapter 7 (Adaptation Strategies). However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Brian Trautwein, Environmental Defense Center	Adaptation	"E. Add conditions to shoreline protective devices that limit authorization of the device to the life of the existing development being protected: In addition to limiting the life of the shoreline armoring device to match the project life, the Document should recommend that LCPs and CDPs require removal of shoreline armoring after the term of the permit / life of the project."	This concept is included in the description of shoreline protection in Chapter 7 (Adaptation Strategies).
California Natural Resources Agency	General	" Governor's Executive Order The Governor's Executive Order (S-13-08) is referenced elsewhere in the body of the document, but it'd be good to include it in the Executive Summary. We recommend adding that there was an Executive Order in 2008 directing state agencies to consider sea-level rise as part of planning projects and directing state agencies to support the preparation of the National Research Council project on sea-level rise."	Change was made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
California Natural Resources Agency	General	"OPC Sea-level Rise Resolution Although the current draft references the OPC Sea-level Rise Resolution elsewhere in the document, it is not in the Executive Summary. Consider adding it to the policy context and to various relevant sections in the guidance document, as described below (e.g. p. 23 comments). Here is a basic summary: the OPC adopted a Sea-level Rise Resolution in 2011 that calls on all state entities and non-state entities doing projects with state funds or on state lands, including those granted by the legislature, to use the latest version of the State of CA Sea-level Rise Guidance Document when making decisions, to avoid using sea-level rise values that would result in high risk, and to avoid making decisions based solely on sea-level rise values in the lower third of the state guidance document, but instead to assess risk over a range, including the upper end of the range."	Greater detail was regarding the OPC Sea-Level Rise Resolution was added to the introduction and other relevant sections.
California Natural Resources Agency	Best Available Science	"Importance of Storms and Extreme Events Consider adding another principle under "Use Science to Guide Decisions" and in other sections of the document about the importance of considering storm events on top of sea-level rise and shoreline change and how it will be the extreme events that cause the most damage and will need to be addressed in planning and design. See the State Sea-level Rise Guidance Document (including appendix from the OPC Science Advisory Team) for suggested language on this topic. Consider referencing the USGS Arkstorm conclusions. See NY City recent report on sea-level rise, which uses the 500- year to guide future planning for essential and critical infrastructure."	A section on storms and extreme events has been added to Chapter 3 (Sea Level Rise Science), which reflects the language in the state guidance. Additionally, extreme events are reflected in the hazard minimization principles.
California Natural Resources Agency	Best Available Science	"Summary of Best Available Science: We recommend adding a disclaimer to the introduction to this section to address how the science is evolving and that this summary presents the best available science at the time of the Commission staff's writing of the document."	Change was made as suggested.
California Natural Resources Agency	Best Available Science	Consider adding a summary of the OPC SLR Resolution: "The Ocean Protection Council's Sea-level Rise Resolution (2011) recommends that state agencies, as well as non-state entities implementing projects or programs funded by the state or on state property, including on lands granted by the Legislature, should not solely use SLR values within the lower third of the range in the latest State of California's Sea-level Rise Guidance Document, and instead should generally assess potential impacts and vulnerabilities over a range of SLR projections, including analysis of the highest SLR values presented in the latest State Sea-level Rise Guidance Document, and to avoid making decisions based on SLR values that would result in high risk."	Reference to the OPC Sea-Level Rise Resolution and the recommendation to not use only a low projection when planning was added to a section on scenario planning that has been added to Chapter 3 (Sea Level Rise Science).

Name/ Affiliation	Key Topic	Comment	Response
California Natural Resources Agency	Best Available Science	"For the second paragraph under "best available science", consider using the National Research Council report to be consistent with the state guidance document, which is referenced in other sections of the Commission's draft guidance document, rather than the National Climate Assessment.	The National Climate Assessment (2012) reports national estimates of sea level rise, and the NRC 2012 report provides regional refinements of sea level rise. The referenced paragraph is in the section describing global/national sea level rise rather than regional sea level rise. Language has been added to the Best Available Science on Sea Level Rise section of Chapter 3 to describe the importance in distinguishing between global and regional projections.
California Natural Resources Agency	Best Available Science	"Consider adding a summary of the National Research Council report - Abrupt Impacts of Climate Change: Anticipating Surprises http://www.nap.edu/openbook.php?record_id=18373&page=6	Reference to this report has been added to a section on abrupt changes in Chapter 3 (Sea Level Rise Science)
California Natural Resources Agency	Best Available Science	"P. 115 states that the best available science is the National Climate Assessment. Consider using the National Research Council report to be consistent with the state guidance document, which is referenced in other sections of the Commission's draft guidance document, rather than the National Climate Assessment.	The National Climate Assessment (2012) reports national estimates of sea level rise, and the NRC 2012 report provides regional refinements of sea level rise. The referenced paragraph is in the section describing global/national sea level rise rather than regional sea level rise. Language has been added to the Best Available Science on Sea Level Rise section of Chapter 3 to describe the importance in distinguishing between global and regional projections.
California Natural Resources Agency	General	"For all references to the state guidance document, please replace the link with this updated streamlined link: www.opc.ca.gov/climate-change/ Here are some places in the document where the link is located: pages 7, 9, 22, 29. (The older link directs to this new streamlined link.)"	Change was made as suggested.
California Natural Resources Agency	Planning	"p. 7 for step 4, add language to account for areas where there isn't a certified LCP.	Change was made as suggested.
California Natural Resources Agency	Planning	"For step 2, add sensitivity, exposure and risk considerations"	The referenced figure on page 11 of the Draft Guidance is meant to provide only a brief description of the planning process for CDPs. Greater detail on the relevant analyses (e.g. geologic stability, erosion, flooding and inundation) is included in Chapter 6 and Appendix B, and these analyses describe and incorporate considerations of sensitivity, exposure, and risk.
California Natural Resources Agency	Planning	"for step 4, consider adding public access to the first bullet so that it states "ideally, locate the project in a site that avoids conflicts with natural resources, public access and sea-level rise impacts."	Impacts to public access are considered in Step 3 and 4 in Chapter 6.

Name/ Affiliation	Key Topic	Comment	Response
California Natural Resources Agency	General	"For the second and third sentences of the first paragraph under "Recent Efforts to Prepare for Sea-level Rise", we recommend this revised version (see changes in bold): ... including developing a California Climate Adaptation Strategy (2009 and an update available in 2014 – Safeguarding California Plan), passing a State Sea-level Rise Resolution (insert link to http://www.opc.ca.gov/webmaster/ftp/pdf/docs/OPC_SeaLevelRise_Resolut ion_Adopted031111.pdf) establishing State Sea-level Rise Guidance (2010 and updated in 2013)...through coordination with the Coastal and Oceans Working Group of the Climate Action Team (CO-CAT)...(next paragraph)...This guidance is being coordinated closely with many of these other initiatives, including the 2014 update ("Safeguarding California Plan") to the 2009 California Climate Adaptation Strategy, 2014 Update to the General Plan Guidelines, ...State Multi Hazard Mitigation Plan...	Changes were made as suggested.
California Natural Resources Agency	General	"Caltrans' Hot Spot project is completed. Acknowledge that Boating and Waterways is now within Department of Parks and Recreation.	Changes were made as suggested.
California Natural Resources Agency	Funding	"Funding for LCP Updates: recommend using this revised language for the last sentence of the first paragraph: "To address this issue, the Ocean Protection Council (OPC) is working in close partnership with the Coastal Commission and the Coastal Conservancy to administer a \$2.5 million grant program using OPC funds to support local governments to assess sea-level rise vulnerabilities and to update LCPs to address sea-level rise." Consider adding the following detail: For the first round of the grant program, eighteen (18) applications were submitted, requesting a total of \$3.8 million. In November of 2013, the OPC approved the recommendation from the team of staff from the three coordinating agencies to provide a total of \$1,305,000 of funding for seven projects selected from the first round of the grant program. A second round of the grant program for the remaining funds will be announced in early 2014."	Change was made as suggested.
California Natural Resources Agency	Planning	"p. 22 For the last sentence in #1, instead of "coastal resources", would it help to be explicit about including public access, since some readers won't think of it?	Change was made as suggested.
California Natural Resources Agency	Best Available Science	"p. 29 Add the different ranges for north and south of Cape Mendocino.	The regional ranges for north and south of Cape Mendocino follow on page 30 of the draft document.

Name/ Affiliation	Key Topic	Comment	Response
California Natural Resources Agency	General	"p. 29 Suggest replacing "final Sea-level Rise Guidance" with "revised State of California Sea-level Rise Guidance Document (2013)".	Change was made as suggested.
California Natural Resources Agency	Best Available Science	"p. 29 Recommend defining what "AR 4 IPCC" means or making the description more generic	Change was made as suggested.
California Natural Resources Agency	Best Available Science	"p. 34 For wetlands, consider adding a statement about the importance of maintaining sediment transport so that wetlands can have sediment supplies to help keep pace with sea-level rise.	Change was made as suggested.
California Natural Resources Agency	Best Available Science	"p. 34 For the water quality section, consider adding something similar to this statement in the draft Safeguarding Plan: "Salt water draining into sewer lines as part of extreme weather flooding may poison the biological systems at treatment plants."	Change was made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
California Natural Resources Agency	Best Available Science	"p. 34 For the water quality section, consider adding some of the references cited in the draft Safeguarding CA Plan about contaminated lands: The presence of facilities or land containing hazardous materials in coastal areas susceptible to either flooding or permanent inundation presents toxic exposure risks for human communities and ecosystems. Hazardous materials can contaminate flood waters, drinking water supplies, buildings and property, and ocean-based food sources. For more information on public health risks from climate change, please see the Public Health section of this document. A 2009 CEC PIER funded study evaluated sites containing hazardous materials at risk from sea level rise in California. The study evaluated a range of sites monitored by the U.S. Environmental Protection Agency for hazardous materials including: "Superfund" sites and brownfields (regulated under the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]), hazardous waste generators, facilities required to report emissions for the Toxic Release Inventory, facilities regulated under the National Pollutant Discharge Elimination System, and facilities with permits under Title V of the federal Clean Air Act for hazardous air pollutants. In 2009, 130 such sites were already located in high flood risk areas, but with a 55- inch sea level rise, the high risk flood area along the California coast will expand - and the number of sites at risk will increase 250% - with an estimated 330 hazardous waste facilities and sites at risk. A more recent 2013 report from the Adapting to Rising Tides ("ART"), a project led by the San Francisco Bay Conservation and Development Commission that worked collaboratively with local governments to "field test" planning to be resilient to sea level rise found that there were eight types of contaminated lands within the ART San Francisco Bay Area sea-level rise study area alone, primarily concentrated in Oakland and Emeryville; these lands include two Federal Superfund sites, 450 leaking underground storage tanks, 112 Departments."	Language was added to the water quality section regarding this topic.
California Natural Resources Agency	Best Available Science	"p. 41 consider adding the upcoming Climate Central sea-level rise mapping tool to the list of resources (it is due to be released in April 2014)	Appendix C (Resources for Addressing SLR) contains many resources for local planners, including CalAdapt. The referenced resource is not included because its release is still pending.

Name/ Affiliation	Key Topic	Comment	Response
City of Encinitas	Planning	"Coastal Commission staff should consult with local agencies to determine how best to inform the local community stakeholders and property owners of impacted properties. For example, Coastal Commission staff could facilitate open house/workshop sessions and/or informational public presentations in select local communities. The Commission may also want to consider providing the general public with more source direct information about sea level rise and of anticipated hazards."	Appendix C (Resources for Addressing SLR) contains many resources for local planners. Commission staff intend to conduct trainings and workshops as needed after publication of the Guidance. These trainings will include a review sea level rise hazards.
City of Encinitas	Policy and Legal analysis	"We are unclear as to how the Coastal Commission will apply these guidelines to LCP amendments, public capitol improvement projects or private land development projects...Based on the scope of the "guidance document", the Commission will be requiring changes to a project or other mitigation measures to minimize risks from sea level rise. As such, there will need to be more front-end coordination with the Coastal Commission staff and local agencies on some site development applications to avoid major project redesigns late in the review process. It would be beneficial to better understand how Coastal staff intends to accommodate for this front-end coordination."	As stated in the Guidance, Commission staff will continue to coordinate with CDP applicants and local governments, and starting this process early is encouraged. Please see the Introduction for information on a recent budget augmentation that has allowed the Coastal Commission to take on some additional staff, as well as grant opportunities to support planning work.
City of Encinitas	Best Available Science	"Agencies should operate under the same methodologies and data sets. There are too many areas of disagreement on the science and projections for future change, which could lead to different techniques for sea level rise analysis."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Other peer-reviewed and well-documented climate science, adaptation strategies, and management practices may be used as equivalent resources. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant.
City of Encinitas	Best Available Science	"The relationship between the physical nature and condition of bluffs, rising sea levels, anticipated erosion rates, safe/unsafe conditions, and natural condition immunity should be further explored as accelerated erosion may increase hazards or injury risk."	Analyses of bluff erosion and other sea level rise impacts are included in Appendix B. Refinement of methods for estimating change in erosion rates and future shoreline change due to sea level rise is included in Chapter 9 (Next Steps). Additionally, as noted throughout the Guidance, the Commission will update the best available science on sea level rise as necessary.

Name/ Affiliation	Key Topic	Comment	Response
City of Encinitas	Best Available Science	"Preventative beach nourishment can greatly influence scenario based planning sea level rise. If an agency has a demonstrated history of success with beach nourishment programs and has financial commitments to continue the placement of sand on beaches to reduce erosion over the life of a proposed structure, there may be different data sets or factors to consider when evaluating sea level rise into those project of planning situations. It is assumed that likely changes in beach conditions due to sea level rise will already be incorporated into beach nourishment and replenishment plans. As such, it is unclear how these "soft protection" variables influence sea level rise projections or influence mitigation measures for site development applications."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Beach nourishment is included as an option in Chapter 6 (Adaptation Strategies). Existing nourishment practices would not change sea level rise projections for a particular location, but they might influence the impacts of sea level rise revealed in the vulnerability assessment.
City of Encinitas	Best Available Science	"Actual sea level rise in a particular location along the coast will likely vary due to changes in vertical land motion and ocean circulation (p. 30). Therefore, if the goal is to come up with adequate information to drive LCP policy or address sea level rise in CDPs, a more comprehensive set of regional and/or sub-regional historical data is needed. The "guidance document" specifies that local governments should identify technical assistance and pursue funding and partnerships necessary to support LCP updates. However, the appropriate geographic scale for this type of coordinated process is at the regional level. Developing uniform and consistent implementing approaches to shoreline management is necessary. That is, agencies should be working together to find areas of agreement and resolve areas of disagreement" 1) Use regionally approved data sets; 2) Make district offices the official central source of information on SLR to enable sub-regional or local planning efforts and updates on projections; 3)Coastal Commission staff can help develop regionally/sub-regionally specific sea level rise policies and implementing ordinances	Thank you for your comment. Language has been added clarifying why the regional projections in the 2012 NRC report (for north and south of Cape Mendocino) are sufficiently location-specific in most places. Also, language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination and innovative partnerships among multiple sectors and levels of government. Commission staff will continue to collaborate with state, regional, and local partners and disseminate updates to the best available science on sea level rise and adaptation strategies.
City of Encinitas	Adaptation	"There are common engineering solutions that are available to minimize these hazards. As such, we find that the policy should be modified to recognize these alternative solutions. Also, this type of policy approach should be well vetted with the State Department of Housing and Community Development (HCD)."	Other engineering solutions are included in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
City of Encinitas	Adaptation	"In order to evaluate their effectiveness and impact, it is unclear how this [Appendix C] possible sea level rise adaptation list of measures was developed and whether there are any community-level and/or site specific level examples associated with each measure."	Adaptation strategies have been moved to Chapter 7 and reflect information gathered from adaptation literature and Commission staff knowledge. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
City of Encinitas	Monitoring, Research Needs, and Next Steps	"Additional research is needed to understand the economic analysis of sea level rise impacts...there needs to be monitoring and measuring during storm events in order to inform policy. The State should be taking the lead on this as this is a non-funded, State mandated program...Guidance on coastal planning-related decisions should be informed about how the rate of retreat might change as a result of sea level rise. However, historical data on bluff erosion does not cover a time period with rising sea levels. Since 2000 there has been little, if any, measurable rise in sea level for most locations in California (p. 124)."	These topics are included in Chapter 9 (Next Steps).
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"Greater clarity is needed within the SLR Guidance to define its regulatory intent. In our view, it is premature to require jurisdictions to implement SLR Guidance when we are just starting to prepare a costly and time-consuming LCP update to comprehensively address SLR with extensive local public input to develop local adaptations. We suggest an interim period of three to five years during which routine CDPs, such as residential and commercial development within already developed areas that are subject to FEMA and other wave run-up and storm surge analyses, will not be appealed by the CCC only for lack of SLR Guidance-directed analysis. In this interim period, the CCC could define what major public works and large-scale new development should include SLR analysis and adaptations as consistent as possible with the Draft or Final SLR Guidance."	In the Executive Summary and Introduction, the document states that this material is guidance, not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis.
City of Oxnard, Development Services, Planning Division	Funding	"While it is important that the SLR Guidance be implemented through the LCP update process, limited funding and the need to develop local SLR expertise and an uncertain Coastal Commission review process could create significant implementation delays. Jurisdictions in the process of preparing a SLR LCP update should be granted some leeway with other CCC-required permitting or amendment applications in recognition of the considerable effort the SLR update will take in local staff and community resources."	The Coastal Commission recognizes the scope of the challenges posed by sea level rise planning, and language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction for information regarding grant opportunities. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"The SLR Guidance should more clearly distinguish between policies that apply to existing versus new development, consistent with the Coastal Act. The SLR Guidance Document should directly address the legal takings issue in the event that implementing the SLR guidance leads to a denial of all uses on a private parcel that previously had entitlements. The SLR Guidance does not provide different guidance for existing entitled versus new development. Instead, the SLR Guidance includes a recommendation that local agencies obtain legal advice regarding specific takings situations. At a minimum, the SLR Guidance should incorporate sections of the Coastal Act which distinguish between existing versus new development: Coastal Act Section 30235 states '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.' Coastal Act Section 30253 states 'new development shall neither create nor contribute significantly to erosion ... or in any way require the construction of protective devices that would substantially alter landforms along bluffs and cliffs.'"	A chapter on the legal context of adaptation planning has been added to The Guidance. Additionally, Chapter 7 (Adaptation Strategies) has a section of adaptation strategies related to planning and locating new development and addressing existing development.
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"We ask the CCC to consider the establishment of a new type of CCC permit, a Time-Certain CDP that may be renewed based on future best SLR science. A Time-Certain CDP should include a requirement to remove the project at the end of its permit life, presuming the ocean is lapping at the foundation."	Reference to removal of structures that become threatened has been added to Chapter 7 (Adaptation Strategies). Additionally, revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and in Chapter 7 (Adaptation Strategies). However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"...suggest requiring the use of industry-practice appraisal or engineering protocols based on expected lifespan of specified structural elements before major repair or replacement is required. A local jurisdiction should have a means to review and, if needed, correct an applicant's lifespan..."	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and in Chapter 7 (Adaptation Strategies). However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"The SLR Guidance should address that some uses may have an indefinite lifespan, such as a habitat restoration, and what SLR scenario to use for an indefinite permanent project."	Revisions have been made to the section on project life in Step 1 of Chapter 6 (Addressing SLR in CDPs) that address these types of projects.
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"...SLR permitting, and the SLR Guidance should include direction that incorporates continuing development of SLR science. A process should exist, similar to extending Subdivision Tract maps during economic downturns, to systematically extend time-delimited CDP's if future SLR is trending lower than expected, or by some similar State-certified criteria."	Language has been added to the Guidance regarding limiting project life. It includes reference to removing the structure at the end of its life OR when threatened by sea level rise hazards.
City of Oxnard, Development Services, Planning Division	Planning	"Principle no. 12 and no. 16 suggest local governments conduct vulnerability assessments and adaptation planning at the regional level, but there needs to be a way to avoid duplication and inconsistency amongst jurisdictions. Perhaps counties or MPO's should be required to address critical regional coastal issues that span jurisdictions rather than have several cities developing different analyses and adaptations for the same facility...SLR guidance is unclear when it describes a study that includes 'regional impacts and any cumulative impacts within a larger planning context in a LCP or other large scale analysis.'"	Collaboration may only be appropriate for certain regions or topics. Therefore, the Guidance recommends identifying opportunities for regional collaboration on a case-by-case basis, especially for the purpose of sharing information and resources or leveraging existing studies. The Coastal Commission will continue to work with local governments and regional coordination efforts.

Name/ Affiliation	Key Topic	Comment	Response
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"Will CEQA push all SLR updates to the maximum adaptation regardless of takings issues and economic impacts? How will local jurisdictions know with certainty what environmental analysis is acceptable to the CCC for its equivalent review process? We encourage the CCC to consider an exemption for SLR LCP updates, similar to CEQA statutory exemptions for preparation of general plan amendments required by the Delta Protection Commission...Urban Water Management Plans...or categorical exemption 15307, procedures to protect the natural environment."	The Coastal Act and certified LCPs remain the standard of review of for projects in the Coastal Zone, and feasibility will continued to be analyzed on a case-by-case basis. A section on the legal context of sea level rise planning has been added to Chapter 7 (Adaptation Strategies). CEQA already includes an exemption for local government preparation and adoption of LCPs. See Pub. Resources Code, § 21080.9. Commission staff is committed to working closely with local governments from the outset of the local planning process, including with respect to information that the Commission will need when reviewing any LCP amendments. Also, a section distinguishing "planning for" and "designing for" sea level rise has been added to Chapter 3 (SLR Science).
City of Oxnard, Development Services, Planning Division	Policy and Legal analysis	"...the <i>Ballona Wetlands Land Trust v. City of Los Angeles</i> case is not resolved as to whether CEQA pertains to the impact of the environment on a project...We suggest the Commission seek a legislative solution that clearly directs the environmental review process or provides an exemption."	The Coastal Act and certified LCPs, which direct review of the impacts of hazards on projects, remain the standard of review for projects in the Coastal Zone. For example, Coastal Act section 30253 requires new development to minimize risks to life and property in areas of high geologic, flood, and fire hazard. The as-yet unresolved issue of whether CEQA pertains to the impact of the environment on a project does not limit Coastal Act and LCP requirements regarding minimizing risks that the environment poses to proposed new development.
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Best Available Science	"Although the document provides projections on sea level rise, these are broad and do not take into consideration the various geological processes and sand sources for the specific area subject to our LCP...It would be important for the Commission to develop sea level rise at the Regional level, with input on the process from local agencies rather than at the State level as this would account for local conditions and be a cost savings for communities with limited resources. It would also provide a level of certainty in the process because sea level rise estimates would be conducted in the same manner up and down the coast."	Because the Guidance is intended as broad, statewide resource, it does not provide location-specific detail on sea level rise projections. In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report. These regional projections for North and South of Cape Mendocino are considered sufficient for accounting for regional variability. The Guidance states that modifications for vertical land motion are not necessary (except for the Humboldt Bay and Eel River areas), but local jurisdictions may do more detailed analyses if desired.

Name/ Affiliation	Key Topic	Comment	Response
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Best Available Science	"Based on experience, we feel we need to be cautious about being overly conservative in projecting SLR that forces development and coastal infrastructure further from the our shoreline because it is largely developed and our citizens expect high quality City services. Some of the approaches for addressing sea level rise seem appropriate only in areas that have not been highly urbanized, such as adaptive planning and establishment of development credit transfer programs. These seem helpful in undeveloped areas; however, in an urbanized City like Pismo Beach, these may not be the most suitable approach. Obtaining community support for LCP amendments that do not take these factors into account will be difficult."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant. As described in the Guidance, analyses and adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Policy and Legal analysis	"The Guidance document does not address how sea-level rise may involve private property rights and takings issues in specific cases. Mandatory requirements ranging from protection to retreat could result in the taking of private property. Addressing sea level rise through a managed retreat approach typically involves establishing thresholds that trigger demolition or relocation of structures threatened by erosion. Therefore, this approach would require instituting relocation assistance and/or buy-back programs to help with relocation costs or compensate property owners when their property becomes unusable. These are issues that need further attention and given greater weight in this document, so that Cities are better able to address them when developing amendments."	A chapter on the legal context of adaptation planning has been added to the Guidance.
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Policy and Legal analysis	"Although the Guidance Document states that it is not a regulatory document, it appears to be ready to be used as the standard of review for future LCP modification applications. If this is the case, then it needs to include a clear standard of review, so that agencies can appropriately develop amendments to their LCP."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and Implementation Plans will continue to be reviewed on a case by case basis. Language has been added to the Introduction clarifying the standard of review.

Name/ Affiliation	Key Topic	Comment	Response
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Planning	"...analysis and development of a local Hazard Condition program needs a highly technical skill set. Again, a costly venture for communities with limited resources and competing demands for services. At times, such analyses are scientifically subjective and disagreement among experts, among others, can occur. These disagreements, although good discourse, lead to uncertainty in the process and raise the potential for un-controlled costs and dedication of a significant amount of staff time. More data and information specific to this section of the California coast could address this."	The Commission recognizes that updating LCPs is a time-consuming and potentially costly exercise. However, updated LCPs that address SLR are essential for ensuring a resilient coast. The Introduction describes grants available to support local governments and includes a number of informational resources that can streamline the planning process. Language has been added emphasizing the need for continued funding and technical support for local governments. See Appendix C (Resources for Addressing Sea Level Rise) for existing regional studies.
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Policy and Legal analysis	"...we would encourage the Commission to give LCP amendments that address SLR priority review and encourage a comprehensive list of corrections or comments during the review process in order to minimize multiple submittals. We would also encourage early consultation be a component of this process so that corrective measures can be identified and addressed prior to submittal of the formal application."	Thank you for your comment. As stated in the Guidance, Commission staff is committed to working with local jurisdictions to facilitate the planning process. The Guidance encourages early coordination between local jurisdictions and Commission staff.
Jon Biggs, Community Development Director, City of Pismo Beach Community Development Dept.	Funding	"As you can see, a common thread through this letter is references to resource constraints. Staff time and resources, especially those of small communities like ours, are limited and administering the Local Coastal Program requires a great deal of attention. The processes identified in this guidance document will require the dedication of additional resources and the fiscal impacts to the community are uncertain. We would encourage the Commission to be mindful of this and think of ways to minimize strains on local resources."	The Coastal Commission recognizes the scope of the challenges posed by sea level rise planning, and language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction for information regarding grant opportunities. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Best Available Science	"The City is concerned with the practical functionality and lack of direction on which of the SLR assumptions are used for planning purposes... The most recent OPC estimates (2013), based on the 2012 National Research Council (NRC) report features an even broader range of SLR values (2-12 inches in 2030, 5-24 inches in 2050 and 17-66 inches in 2100), but neither the OPC nor CCC have identified specific assumptions within these ranges for practical planning use. The result is that individual projects require analysis of at least two distinct scenarios to cover the high and low end of the scale. And, there is no direction as to how local jurisdictions should weigh the factors to decide which SLR assumptions to ultimately use for project review. The result is a cumbersome process that is both extensive and extremely expensive. Although the present state of science is still uncertain and can be anticipated to be changeable and uncertain over time, more specific guidance should nonetheless be provided."	A section in Chapter 3 (Sea Level Rise Science), was added explaining why projections are given in ranges, and why scenario-based analysis can be used in response. A number of adaptation strategies are presented in Chapter 7, and these should be considered on a location specific, case-by-case basis, and local governments will most likely implement them in a way that reflects local priorities. The Coastal Commission recognizes the challenges that exist, and language has been added emphasizing the need for continued funding and technical support for local governments.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Best Available Science	"The process steps in the OPC estimates (2013) and draft CCC guidance documents require local jurisdictions and individual technical analysts to identify which SLR estimates to use, and which scenarios to require. This is inherently problematic, as methodologies and assumptions will likely vary between jurisdictions, research efforts, and the CCC, leading to unpredictability during the review process.... Further, if a local agency chooses particular methodologies and assumptions and the Coastal Commission later disagrees with them during an appeal process, extensive delay added costs would result."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report. A section in Chapter 3 (Sea Level Rise Science), was added explaining why projections are given in ranges, and why scenario-based analysis can be used in response. Analyses and adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. The Coastal Commission will continue to provide assistance on how to apply the Guidance to a specific LCP or CDP application. Early coordination with Coastal Commission staff can reduce unpredictability in review process.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Dev. Dept.	Policy and Legal analysis	"Evaluating sea-level rise scenarios in 2100 poses additional issues. Eighty-six years is an unrealistic planning horizon, rooted in speculation. No current City plans or documents span that horizon. As a result, the City suggests that the 2100 planning horizon be eliminated or at a minimum not required for use in any permitting. Instead, all project level analysis should be consistent with the length of the permitted life of the project."	A section on using scenario-based planning in both an LCP and CDP context has been added to Chapter 3 (SLR Science). The guidance recommends analyzing the sea level rise in the year 2100 in certain cases because of the potential for decisions made today to constrain the opportunities for adaptation and the degree of hazard impacts to coastal infrastructure in the coming decades.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Policy and Legal analysis	"Many of the actions in the guidance document have significant legal impacts, but a discussion of case history and mediation measures is not detailed. For instance, reducing development life is a sea-level rise mitigation measure mentioned multiple times during the CDP process. The City is concerned that this will be viewed as a regulatory "taking," and the CCC guidance document does not provide direction on the legality of implementing such actions. This document should also mention that state land boundaries and coastal jurisdiction boundaries will change with SLR. As a result, an expanded discussion of regulatory takings is needed."	A chapter on the legal context of adaptation planning has been added to the Guidance.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Adaptation	"Overall, the City supports the range of adaptation measures outlined. However, the adaptation strategies should also provide considerations for short-term solutions pertaining to storm events, and what the community can do to prepare for, and survive such events. Retreat and relocation strategies are important actions to consider, but near-term events are often far easier to predict, and plan for mitigation. For instance, many of the City's coastal facilities and infrastructure were damaged by storm events, wave run-up and flooding during the storms of 1983. It is predicted that climate change will increase the frequency of extreme weather events, and with increased high water lines due to sea-level rise, flooding vulnerabilities and storm damage are anticipated to increase. As a result, it seems likely that another storm event like the one in 1983 will occur, and therefore, actions should be made to address existing facilities and infrastructure."	Chapter 7 (Adaptation Strategies) provide a wide array of adaptation measures, including those that are focused on both short and long-term impacts.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Planning	"The 6-step approach for LCP updates lacks a public input component. The City suggests that consideration for local input be provided after adaptation measures are identified (Step 4). A consideration in the planning process should also include regional collaboration and the involvement of local special districts (water, sewer, fire, etc)."	Language has been added regarding the importance of public input in the LCP process.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	General	"The City encourages the CCC to edit the document for a broader audience with information that can be easily disseminated, particularly in Section III, which discusses the science behind sea level rise."	Chapter 3 (Sea Level Rise Science), was edited to explain why projections are given in ranges, the importance of using scenario-based analysis to plan for uncertain future conditions, and impacts of extreme events. Appendix C and the References provide additional informational resources for various audience types.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Funding	"The City is concerned with the fiscal implications of the multi-step approach required for LCP updates and CDPs, and the requirement for increased project-level analysis. While this increased analysis may be justifiable for LCPs and large new development projects, this approach would make many minor projects and routine maintenance efforts cost-prohibitive. The City specifically requests that the CCC consider exemptions to SLR analysis for repair and maintenance of public works facilities, with an emphasis to protect and ensure continuous operation of critical infrastructure. Public safety exemptions should also be considered for private maintenance and repair projects."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions, and encouraging local governments to leverage existing studies and other resources. Please refer to the Introduction for information regarding grant opportunities. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and CDPs will continue to be reviewed on a case by case basis. In addition, on-going repair and maintenance issues for public works facilities can be addressed in a Public Works Plan.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Policy and Legal analysis	"Step One of the 5-step CDP process states that projects should be adjusted for local conditions, but no direction is provided indicating which conditions matter, and how these conditions affect the process. Under Step 2.1 - Analyze relevant sea-level rise impacts, further detail is needed about the mechanism with which project life may need to be shorted due to erosion analysis (e.g. would a structure be required to be demolished if implementing a protective device is the only method to save the development?)."	The referenced part of Step 1 has been revised to provide more clarity. Step 4 of Chapter 6 describes strategies to avoid or minimize hazards, including a revised section on project life. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Planning	"Step Three needs to detail how a municipality should consider adjacent future projects that may exacerbate SLR or inundation area during the review process. With the exception of the 'New Development' heading, the sections of Step 3.1 - Analyze coastal resource impacts and hazard risk, do not lend themselves to evaluating a CDP for a development project. Instead, these sections focus on the evaluation of the overall impacts of SLR on resources in general. The Water Quality section states that the elevation of the groundwater table should be identified, but does not clarify the methodology for this analysis or who should conduct it (e.g. does this require a hydrologist?)."	As stated in the introduction to step 3.1 in Chapter 6 (Addressing SLR in CDPs), the goal of this section is to identify impacts to resources that may result from <i>both</i> sea level rise <i>and</i> the proposed development to ensure that new development will avoid or minimize risks to natural resources even as sea level rises. CDPs will continue to be reviewed on a case-by-case basis, and not all CDPs will require all possible analyses. This Guidance provides a starting point for additional planning on the topic-specific level, and the Commission recognizes that more detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Planning	"Step Three of the example CDP project includes a component regarding bluff-top residential development. This section states that all relevant resources should be evaluated for SLR impacts both with and without project implementation. It may prove onerous to require an applicant to evaluate both of these scenarios."	The intent of this example was to illustrate the step-by-step planning process outlined in Chapter 6 (Addressing SLR in CDPs). Step 3 of this process includes analyzing the impacts to coastal resources now and into the future from both the proposed project and sea level rise, recognizing that sea level rise will likely cause resources to shift.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Monitoring, Research Needs, and Next Steps	"Step Five includes a monitoring component. A provision should be added to address the specifics for how the monitoring requirements should be implemented."	Revisions have been made to the section on monitoring in Chapter 6. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Policy and Legal analysis	"Further guidance is needed to address how finished flood elevations I base flood elevations should be evaluated when considering consistency with existing Flood Control District and FEMA requirements. Likewise, the guidance document points to increased monitoring as a methodology to evaluate SLR hazards, and "triggers" are proposed as a mechanism to justify the modification of development life, but specific thresholds and detailed guidance are not provided."	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide clarity on this issue. However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Commission recognizes the challenges with meeting requirements from other agencies, and is committed to working with project applicants during the sea level rise planning process.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	General	"In order to protect the City's critical operations, the City must plan ahead and identify the adaptive capacity, consequences of SLR, and evaluate land use planning options and constraints as proposed in the SLRPG. The City appreciates that critical infrastructure such as wastewater treatment plants and transportation infrastructure have been specifically incorporated for consideration in Section IV of the SLRPG."	Thank you for your comment.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Policy and Legal analysis	"Section 4. 1 Planning and Locating New Development suggests changes to an updated LCP in order to address the kinds, locations, and intensity of uses allowed in the coastal areas at increased risk of coastal hazards. This section proposes updated development standards and redevelopment restrictions. As the Commission is aware, the City's El Estero Wastewater Treatment Plant is currently considered a non-conforming use with respect to the City's LCP. Such additional development restrictions as suggested in Section 4.1 could severely restrict or delay the City's ability to upgrade critical systems at El Estero to maintain compliance with State and Federal air and water quality standards and permitting requirements. The City suggests an exemption to this development restriction for wastewater treatment plants located in the Coastal Zone. This is necessary in order to continue safe and reliable operation of this critical piece of City infrastructure. In addition, provisions should be made to expedite the review process of all critical infrastructure projects."	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Staff recognizes that for particularly challenging issue areas, such as waste water treatment plants and other critical facilities at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance, etc.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Adaptation	"Section 4.3 Public Access and Recreation suggests changes to an updated LCP that would add policies to address impacts to transportation plans. Such policies would establish new alternative transportation routes for areas at risk from SLR, to ensure that continued alternative transportation and parking is available. As described above, many of the City's primary transportation routes are in the Coastal Zone. The City appreciates the Commission's inclusion of alternative transportation route planning in the event of SLR. However, the Commission's draft coastal retreat policy includes converting costal property vulnerable to sea rise to open space. The City is concerned how such a policy would affect critical infrastructure such as public roads."	Please refer to Chapter 7 (Adaptation Strategies) for guidance on how to employ a wide range of adaptation strategies. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Adaptation	"Section 4.6 Water Quality proposes updates to the LCP, which would include policies that would establish a long-term strategy for saltwater intrusion in aquifers. The City supports policies which establish long-term strategies, while not limiting the City's various pumping alternatives for this critical resource."	Thank you for your comment. Chapter 7 (Adaptation Strategies) presents adaptation strategies intended to be considered on a location specific and case by case basis, and should be implemented in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships.
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	General	"Section VII. Next Steps lists Goals and Objectives from the CCC's recently completed Strategic Plan for 2012-2018. Objective 3.2 - Assess Coastal Resource Vulnerabilities to Guide Development of Priority Coastal Adaptation Planning Strategies including several actions, especially 3.2.2 and 3.2.3, which encourage interagency coordination and collaboration to address public infrastructure vulnerabilities. The City is in strong support of such policies as public agency partners such as Caltrans, the Department of Water Resources, and others are critical for assessing coastal resource vulnerabilities."	Staff appreciates your comment, and will continue to coordinate with other state agencies on these challenges.

Name/ Affiliation	Key Topic	Comment	Response
Bettie Weiss, Acting Community Development Director, City of Santa Barbara Community Development Dept.	Adaptation	"Appendix C, Table 17. Site Development Standards and/or Mitigation identifies infrastructure service protection as a category where " ... LCPs can identify critical infrastructure to hazards from sea-level rise, and can include criteria for managed relocation of at-risk facilities and direction to ensure continued function of critical infrastructure given sea-level rise and extreme storms." The City is in support of the implementation of any and all measures that ensure continued function of critical infrastructure."	Thank you for your comment.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Policy and Legal analysis	"The Guidance Document states that the purpose of the document is not that of "regulatory." However, the document's title and recommendations to amend LCPs infer "policy" and "regulation" instead of guidance. DBH recommends that the document clearly states that it is a guidance document and that it stays consistent throughout."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and CDPs will continue to be reviewed on a case by case basis.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Best Available Science	"Published documents prepared by different agencies, such as the National Research Council (NRC) SLR, projecting SLR cover large geographic areas and with varying results. It would be very difficult to utilize the recommended NRC SLR document, or any other current scientific document for that matter, to project local conditions. To do this, local public agencies would need to extensively use public funds, possibly at the expense of other public services, to project SLR along their coastlines. The Guidance Document should be revised to include the flexibility to use studies pertinent to local conditions."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Policy and Legal analysis	"The Coastal Act does not prohibit the construction of seawalls. Section 30253 of the Coastal Act states that 'New development shall minimize risk to life and property in areas of high geologic, flood, and fire hazard'. Minimization of risks can include the use of revetments, seawalls, and retaining walls and the Guidance Document should reflect this."	Chapter 7 (Adaptation Strategies) includes the use of hard structures as an adaptation option where applicable and consistent with the Coastal Act.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Adaptation	"Provide for maximum protection of public beach and recreational resources in all coastal hazard planning and regulatory decisions--Stated options should include repairing and replacing structures such as groins that serve to protect public beaches from erosion, therefore maintaining a recreational asset and public access."	Language about maintenance of structures has been added to Chapter 7 (Adaptation Strategies).

Name/ Affiliation	Key Topic	Comment	Response
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Adaptation	"Maximize natural shoreline values and processes; avoid the perpetuation of shoreline armoring -This is contrary to Sections 30235 of the Coastal Act, which states, "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". These coastal protection structures have proven to be effective in Los Angeles County and the East Coast, in the prevention of erosion and protection of coastal facilities. Removing them would hamper public safety, infrastructure, public facilities and private property."	Chapter 7 (Adaptation Strategies) includes the use of hard structures as an adaptation option where applicable and consistent with the Coastal Act.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Policy and Legal analysis	"Require mitigation of unavoidable public coastal resource impacts related to permitting and shoreline management decisions - Mitigation fees are already required as part of the Coastal Development Permit, Regional Water Quality Control Board, CEQA, and Federal permit processes. Because there are already mitigation fees in place, adding more fees could discourage projects that protect public beaches and enhance the public's access to the coast. Instead there should be no mitigation fees for projects of this type."	Mitigation is a common part of Coastal Commission practices, and projects will continue to be reviewed on a case-by-case basis.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Best Available Science	"The Intergovernmental Panel on Climate Change 4th Assessment Report (IPCC AR 4) referenced in the Guidance Document is outdated. The new IPCC AR 5 was released last fall, and contains more conservative assessment projections. Should the IPCC AR 5 be used instead of IPCC AR 4 to account for local projections?"	A description of the new IPCC AR5, which discusses global sea level rise, has been added to the Guidance. In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the regional projections from the 2012 NRC report or an equivalent resource.
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Adaptation	"B and C Physical Impacts of Sea-Level Rise/Consequences of Sea-Level Rise for Coastal Resources and Development - The Guidance Document should emphasize that local jurisdictions affected by all physical impacts should utilize, to the maximum extent possible, offshore sand sources and develop a nourishment program, as suggested on Page 54, to mitigate erosion and protect recreational areas and facilities."	Thank you for your comment. Beach nourishment and the use of offshore sand sources are included in Chapter 7 (Adaptation Strategies). It is expected that strategies will be implemented on a case-by-case basis and in way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Gary Jones, Acting Director, County of LA, Dept. of Beaches and Harbors	Adaptation	"'Limit or prohibit use of bluff retention or shoreline protection for new development /Require property owners to waive the right to shoreline protection in the future' - Coastal Act, Section 30253, allows for protection of new development, including the protection of "special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses", and the Guidance Document should reflect this."	Section 30253 of the Coastal Act refers to minimization of adverse impacts and states that new development shall "Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses." The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone, and the adaptation strategies in Chapter 7, such as the strategy referenced here, should be implemented in light of all applicable Coastal Act or LCP policies. The Coastal Act allows shoreline protection when necessary to protect existing development, including existing development in special communities, and when appropriate mitigation is provided.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Best Available Science	"The direction specified in Step 1 requests that jurisdictions modify the range of sea level rise projections specific for their region to account for local conditions. The guidance document should provide more information on how jurisdictions should modify the region specific projections to account for local conditions, including examples of local conditions that should be considered in the projections."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report and notes that in cases except for the Humboldt Bay and Eel River Estuary region, these projections can be used without modification for local conditions (such as vertical land motion). Language has been added explaining why it is not necessary to modify sea level rise projections for local vertical land motion, though the process for doing so is described in Appendix B.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Planning	"The discussion in the Adaptive Capacity, Consequences, and Land Use Planning Options and Constraints Sections under Step 3 should be located under Section 4, as this information is more a part of the response rather than an assessment of risk to sea level rise impacts."	Part "e" of step 3 (Land Use Planning Options and Constraints) has been changed to "Land Use Constraints". This section, along with the "Adaptive Capacity" and "Consequences" section are still in Step 3 because understanding what types of consequences there are along with the current constraints are important for assessing the vulnerability of the various coastal resources. Step 4 requires this broad conceptual analysis so that specific adaptation strategies can be chosen or developed.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Adaptation	"The discussion for identifying adaptation measures to minimize risks in Step 4 lacks guidance for the role of the public process in updating a certified LCP. Additionally, it would be helpful to include examples of adaptation methods in the guidance document."	Language has been added to the introduction of Chapter 5 (Addressing SLR in LCPs) emphasizing the importance of including public input in the LCP process. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Adaptation	"In general, the suggestions in Section 4 that would affect existing development will be much more challenging to apply than for vacant land. The guidance document should include a robust discussion for each of the suggested updates to development standards in the LCP. The direction specified in Step 4.1 suggesting changes to the LCP for planning and locating new development lacks guidance for built out areas where their uses can become nonconforming and can lead to potential legal issues associated with this suggestion. The discussion on updating development standards to include language for converting vulnerable areas to conservation or open space site by allowing and encouraging retirement or transfer of developments rights on private property subject to sea level rise raises questions as to whether this type of development standard will be supported by Coastal Commission."	A section on the legal context of adaptation planning has been added to Chapter 7 (Adaptation Strategies). This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Policy and Legal analysis	"We are concerned about the feasibility regarding the direction under Step 4.1 to: 1) limit subdivision in areas vulnerable to sea level rise by prohibiting certificates of compliance (COC) since COCs simply recognize legal lots, rather than create them; and 2) the direction to consider a shorter development life for constrained lots. Additionally, we are concerned about potential legal issues, including takings claims, associated with the suggestion to limit expansion and redevelopment of non-conforming or other land uses in hazardous areas."	The intent of including certificates of compliance in the referenced section is to recommend the prohibition of new land divisions in hazardous areas, and COCs are included as a mechanism by which new land divisions would be recognized. Shortened project life is described more fully in Step 4 of Chapter 6 (Addressing SLR in CDPs). Additionally, a section on the legal context of adaptation planning has been added to Chapter 7 (Adaptation Strategies).
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Adaptation	"The direction specified in Step 4.1 concerning limiting development near vulnerable water supplies isn't clear. Does this include private wells?"	Clarification to these points has been added to Chapter 7 (Adaptation Strategies).
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Adaptation	"The discussion of suggested changes to existing LCPs under Step 4.5 states that existing LCP agriculture policies may need to be updated to include policies limiting the conversion of nonprime agricultural land and establishing incentives for conservation easements. It is unclear how these policies will protect agriculture given sea level rise projections."	Revisions have been made to provide greater clarity. Both strategies are meant to protect areas that could be used for agriculture now or in the future.

Name/ Affiliation	Key Topic	Comment	Response
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Adaptation	"The suggested action under Step 4.5 to minimize impacts by identifying and rezoning areas suitable for future agricultural production to replace areas lost to sea level rise seems impractical. Because most counties originally used an agricultural zoning as a catch-all for all non-developed land, there will be little opportunity to rezone additional agricultural land."	Chapter 7 (Adaptation Strategies) includes a wide array of options that may not be applicable in all cases. It is expected that adaptation strategies will be implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Adaptation	"The direction to add policies to protect archeological and paleontological resources from sea level rise in Step 4.7 should include language regarding the significance of the resource."	Change was made as suggested.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Planning	"The discussion of Scenic Resources in Step 4.8 is not very specific; the guidance document should provide more information on what visual impacts may occur with sea level rise."	Adaptation strategies such as the elevation of structures and use of seawalls are likely to become more common as sea levels rise. A section on potential impacts to scenic resources due to sea level rise has been added to Chapter 4. Impacts of individual projects on scenic resources will continue to be evaluated on a case-by-case basis.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Planning	"The discussion under Step 5 for updating LCPs and obtaining certification with the Coastal Commission does not characterize the process accurately and should provide more details on the certification process."	The focus of this guidance is how to include sea level rise in the analysis stage of developing a CDP. The process by which CDPs are certified by the Commission has not changed. CDPs will continue to be reviewed on a case by case basis.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Planning	"The discussion of expected project life or design life in Step I states that the proposed life of a project may need to be shortened if the project site is constrained by hazards such that development cannot be sited and designed to be safe for a 50 or 75 year design life without reliance on protection efforts or impacts to coastal resources. The guidance document should provide more information on how jurisdictions could implement such a recommendation, due to the potential legal issues associated with this suggestion."	A chapter on the legal context of adaptation planning has been added to the Guidance, and revisions have been made to the section on project life in Chapter 6 (Addressing SLR in CDPs). This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation

Name/ Affiliation	Key Topic	Comment	Response
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Planning	"The direction specified in Step 3 requests analysis beyond the scope of potential project impacts. For instance, under Public Access and Recreation, the Guidance Document states that all public access locations on or near the proposed project should be identified, and that impacts to those access points from sea level rise should be determined. Similarly, the Coastal Habitats section specifies that all coastal habitats on or near the proposed project site need to be identified, and impacts to those habitats on and offsite from sea level rise need to be analyzed. This same issue applies to the analysis requested for Scenic Resources."	The guidance is rooted in certain fundamental requirements of the Coastal Act. The guiding principles in Section C of Chapter 2, consistent with the Coastal Act, emphasize maximizing protection of public access, recreation, and sensitive coastal resources. As such, Step 3 of Chapter 6 recommends identifying those resources on or adjacent to a project site and analyzing potential impacts from sea level rise on the project.
Glenn Russell, Director, County of Santa Barbara Planning and Development Dept.	Planning	"Under the Agricultural Resources and Water Quality sections of Step 3, the Guidance Document stipulates that necessary submittal information includes estimation of the likely future elevation of groundwater, whether groundwater changes will alter proposed site conditions, and whether drainage patterns will change with rising sea level. These requirements are not feasible or appropriate at the level of individual Coastal Development Permits."	A section on sharing information and leveraging resources, which may include utilizing the information from LCP analysis for CDPs, has been added to Chapter 6 (Addressing SLR in CDPs). Language has been added emphasizing the need for continued funding and technical support for local governments. Projects will continue to be reviewed on a case by case basis.
Greg Dale, President, Humboldt County Farm Bureau	Adaptation	"The Coastal Commission's future Sea-Level Rise Policy Guidance should acknowledge the unique problems faced by Humboldt County in protecting its coastal agricultural lands and recognize the role that existing dikes and levees play in their future protection. The Coastal Commission's Sea-Level Rise Policy Guidance should provide policies that establish affordable avenues for landowners to repair, maintain and improve those structures as required to preserve the current land base."	Language has been added to Chapter 7 (Adaptation Strategies) related to the use of dikes and levees to protect agriculture. It is expected that strategies will be implemented on a case by case basis in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Greg Dale, President, Humboldt County Farm Bureau	Adaptation	"Providing a streamlined process for a regional programmatic exemption or permitting program is imperative so ranchers can raise dike and levee elevations to heights necessary for protecting lands from increasing tidal action. One highly important feature of this program should be an allowance for the proportional widening of the bases of these dikes to maintain structural functionality as the rise in sea level elevation requires."	Language has been added to Chapter 7 (Adaptation Strategies) related to the use of dikes and levees to protect agriculture. Projects will be evaluated on a case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
Greg Dale, President, Humboldt County Farm Bureau	Policy and Legal analysis	"The Farm Bureau requests consistency with Coastal Act mandates and explicit policies necessary to accomplish protection of the unique agricultural resources in the coastal regions of Humboldt Bay."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Greg Dale, President, Humboldt County Farm Bureau	Policy and Legal analysis	"We encourage you to revise the Draft Sea Level Rise Policy Guidance Document to include the mandated "Protection" of agricultural lands in our coastal region and work to approve and provide policies that allow for the maintenance and improvement of essential dikes and levees in order to respond to the threat of sea-level rise."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Richard Harris, San Francisco Public Golf Alliance	Policy and Legal analysis	"Many aspects of this "Guidance" constitute "underground rulemaking", in violation of the Administrative Procedures Act (APA). Section 11342.600 of the Government Code defines "regulation" as "every rule, regulation, order, or standard of general application... adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure." Every "regulation" is subject to the rulemaking procedures of the APA unless expressly exempted by statute. Government Code Section 11346. If a rule looks like a regulation, reads like a regulation, and acts like a regulation, it will be treated by the courts as a regulation, whether or not the issuing agency so labeled it. State Water Resources Control Board v. Office of Administrative Law, 12 Cal.App.4th 697 (1993). Any doubt as to the applicability of the APA should be resolved in favor of the APA. Grier v. Kizer, 219 Cal.App.3d 422 (1990)."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs and CDPs will continue to be reviewed on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Richard Harris, San Francisco Public Golf Alliance	Policy and Legal analysis	"This guidance is rooted in certain fundamental guiding principles, many of which derive directly from the requirements of the Coastal Act." (emphasis added). The word "many" constitutes an admission by the drafters that some of the "guiding principles" enumerated in the draft Guidance do not derive from the requirements of the Coastal Act. To maximize clarity and minimize ambiguity, the final version of the Guidance should identify, for each individual principle articulated therein, which Section of the Coastal Act, and/or Regulation of the Coastal Commission, and/or other legal authority, is the source of the specific principle."	Chapter 2 (Principles for Addressing SLR in the Coastal Zone) headers cite Coastal Act Sections relevant for each grouping of principles. Chapter 4 also cites relevant Coastal Act Sections and policies corresponding to consequences of sea level rise for coastal resources and development.
Richard Harris, San Francisco Public Golf Alliance	Adaptation	"'Maximize natural shoreline values and processes and embrace green infrastructure and living shore lines; avoid the perpetuation of shoreline armoring. ' (emphasis added) This element of the proposed Guidance is inconsistent with the mandate of Coastal Act Chapter 3, Section 30235, which expressly provides that shoreline armoring "shall be permitted when required": "Section 30235. Construction altering natural shoreline. 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. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible." (emphasis added)."	Chapter 7 (Adaptation Strategies) includes the use of hard structures as an adaptation option where applicable and consistent with the Coastal Act.
Richard Harris, San Francisco Public Golf Alliance	Policy and Legal analysis	"Existing coastal development should avoid or minimize impacts to coastal resources in any repairs, maintenance or renovations. Sea-level rise protection measures for existing development should be analyzed for coastal resource impacts, and any impacts should be minimized. Renovations or redevelopment that constitutes new development should avoid or minimize risks and protect coastal resources in accordance with guidance for new development." (emphasis added) No citation to the Coastal Act or any other law is cited for this proposition. The Guidance is vague and uncertain on this point, because neither the Guidance nor the Coastal Act define "renovation," "redevelopment," or "redevelopment that constitutes new development". Moreover, Paragraph II.B.6 appears to be inconsistent with Coastal Act Section 30235, quoted above in paragraph 3 of this letter."	The guiding principles in section B, including the principle referenced in this comment, refer to Coastal Act Sections 30253, 30235, 30001, and 30001.5. Terms such as redevelopment and renovation are often defined by LCPs and some additional information on redevelopment has been added to the Guidance. The Coastal Act and certified LCPs continue to be the standard of review for projects in the Coastal Zone.

Name/ Affiliation	Key Topic	Comment	Response
Richard Harris, San Francisco Public Golf Alliance	Policy and Legal analysis	""For a new development project potentially subject to future erosion, the permit should include a 'no future seawall' deed restriction that requires property owners to waive the right to any future shoreline protection.' The Guidance cites no Coastal Act section or other legal authority for this. If there is such legal authority, it should be specifically identified. Moreover, the sentence is ambiguous: it refers alternately to a "no future seawall" deed restriction, and to a much broader waiver of "any future shoreline protection." The sentence should be clarified on this point, to avoid uncertainty."	The section header for this guiding principle refers to minimizing coastal hazards and cites Coastal Act sections 30253, 30235, 30001, and 30001.5. A chapter on the legal context of adaptation planning has been added to the Guidance. The "no future seawall" provision is an example of a type of deed restriction that would minimize impacts to coastal resources by restricting the use of hard shoreline protective devices.
Richard Harris, San Francisco Public Golf Alliance	Policy and Legal analysis	"Caption 'Maximize natural shoreline values and processes; avoid the perpetuation of shoreline armoring,' is vague and uncertain in its use of the undefined terms "major renovations" and "redevelopment". These terms should be defined. Without citation to any provision of the Coastal Act or other authority, Section II.C.10 appears to equate "major renovations" and "redevelopment" with "new development". If there is any authority for this proposition, the authority should be cited. Moreover, the caption "avoid the perpetuation of shoreline armoring" is unsupported by any reference to the Coastal Act or other authority, and is in fact inconsistent with Coastal Act Section 30235, supra. The Guidance's purported injunction against "shoreline armoring" is not supported by Coastal Act Section 30253(3), which refers not to sea level shoreline armoring , but rather to "protective devices that would substantially alter natural landforms along bluffs and cliffs ." (emphasis added)."	The section header for this guiding principle refers to minimizing coastal hazards and cites Coastal Act sections 30253, 30235, 30001, and 30001.5. Terms such as "redevelopment" and "major renovation", and how these might trigger "new development" are often defined in specific ways in different LCPs, and are included in this Guiding Principle in a more general sense. A chapter on the legal context of adaptation planning, including a discussion of Coastal Act sections 30235 and 30253, has been added to the Guidance.
Tijuana River NERR	Planning	"Regional coordination is encouraged throughout the document, but please also encourage regional consistency to the extent possible. For instance, the range of sea level rise for 2100 is very large (i.e., 16.56 inches to 65.76 inches). If each regional agency chooses a different low, medium, and high scenario to plan within this range, it makes regional coordination more difficult. If agencies can agree on planning to the same or similar scenarios, then collaboration among agencies will be less cumbersome."	Given the variety of sea level rise impacts and other factors as well as local priorities and goals, it is likely that there will be variability in vulnerability assessments and LCP updates. However, the Commission will continue to support efforts to collaborate and to share information on adaptation strategies and other sea level rise work. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Tijuana River NERR	Planning	"Regional collaboration among different levels of government (i.e., local, state, federal) was explicitly encouraged throughout the document, but it would be nice to see collaboration among broader regional partners and land use managers (i.e., NGOs, Foundations) encouraged as well. It is important to be specific about this, since in many of these local jurisdictions nongovernment partners play a direct role in land management and/or the decision-making process."	Sections on regional collaboration and leveraging resources from a variety of partners have been added to Chapter 5 (Addressing SLR in LCPs).
Tijuana River NERR	Monitoring, Research Needs, and Next Steps	"Although admittedly complex, we would like to see the guidance document encourage sea level rise planning and modeling be integrated with fluvial and watershed planning and modeling. Many regions are at risk from both sea level rise and riverine flooding (i.e., Tijuana River Valley) and how those two interact will have broad, sweeping consequences for how those regions adapt to sea level rise and other coastal hazards."	The particular changes in fluvial systems that result from sea level rise have been noted as an area that needs additional research in Chapter 9 (Next Steps).
Tijuana River NERR	General	"Encouraging agencies to integrate sea level rise adaptation and planning into their existing policies, plans, and practices will help to bring climate change into focus more effectively. This document is an excellent opportunity to encourage agencies to move forward in spite of lack of capacity (e.g. technical resources, staff time), as well as offer agencies suggestions on how to prepare for sea level rise within existing frameworks and with limited resources."	Thank you for your comment. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Tijuana River NERR	Planning	"It is important to make the connection between adaptation and hazard mitigation. There are theoretical and practical differences between the two, but in many regions the two fields are being integrated. In addition, local governments are intricately familiar with hazard mitigation, and there is funding out there for this. This suggests that for some entities the prospect of linking sea level rise adaptation to a well-recognized and funded field is central to helping communities understand the importance of sea level rise to their health and safety. Perhaps an excerpt outlining the similarities (i.e., linkages) and differences between the two areas would be useful in helping people orient themselves within the larger adaptation versus mitigation discussion."	Language has been added to Chapter 5 (Addressing SLR in LCPs) related to leveraging resources and the connection between hazard mitigation and adaptation planning.

Name/ Affiliation	Key Topic	Comment	Response
Tijuana River NERR	Planning	"The guidance document does an excellent job of defining terms for its intended users, but we would like to point out a couple of specific terms that have caused stakeholder confusion within our local process here in the Tijuana River Valley (CURRV). (1) What is the difference between vulnerability and risk? Can we just assess vulnerability or should we assess both? (2) How does the commission define scenarios? Scenario planning is widely used to prepare for climate change but scenarios are defined differently by many agencies."	Vulnerability and risk are both defined in the glossary. These terms are similar and related. In general, vulnerability is related to a resource's exposure and susceptibility to harm and its adaptive capacity to minimize harm, while risk is related to the likelihood of an event and consequences to the resource. Step 3 in Chapter 5 goes over the process for assessing both the vulnerability of resources to sea level rise hazards and the potential risks from sea level rise. It is important to assess risk in addition to vulnerability to identify the potential problems, or consequences, which could result from a hazard. A section in Chapter 3 (Sea Level Rise Science) was added explaining why projections are given in ranges, and why scenario-based analysis can be used in response.
Tijuana River NERR	General	"In Appendix D, a multitude of resources are compiled and presented to readers. Perhaps we might suggest organizing them based on what step in the planning process they are most useful. Agencies embarking on sea level rise planning are going to take it one step at a time, and if they feel overwhelmed with too many resources from the beginning it may stall the process. By providing audiences with resources that correlate with the Commission's specific planning process steps, the document will help to focus agencies in on what resources are most important to their process and at what stages of planning."	References to particular steps have been added to the new Appendix C (Resources for Addressing SLR) where possible.
Lyn Krieger, Director, Ventura County Harbor Department	Planning	"Without some independent source of funding, combined with availability of staffing both at Coastal Commission offices and in our local jurisdictions, we believe it is unlikely that a majority of agencies will undertake this process in the near future. This limits the potential functionality of your recommendations, since most jurisdictions will be operating under their current, mostly outdated, plans. This leaves local agencies without some consistent standards or procedures embedded in LCP's and certified by the California Coastal Commission, leading to uncertainty about standards for processing. Under these circumstances, it is unclear what tools local agencies will have to require or facilitate such reviews."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the introduction for information regarding grant opportunities. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Lyn Krieger, Director, Ventura County Harbor Department	Policy and Legal analysis	"For those agencies, such as ours, with another form of planning document certified by the California Coastal Commission, in our case a Public Works Plan, there are no Coastal Development Permits, merely Notices of Impending Development subject to the currently certified document as the standard of review. It is unclear how the proposed guidance would be applied to these situations, since the standard of review is already established."	In the case of Public Works Plans, sea level rise might prompt an update of the plan to ensure that future proposed actions address sea level rise. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and should be applicable for other types of planning processes. Individual actions will continue to be reviewed on a case by case basis.
Lyn Krieger, Director, Ventura County Harbor Department	Funding	"Again this leads to uncertainty in processing, often resulting in slower processing times, increased costs, and frustration on all sides. These factors are compounded by the fact that, as currently established, agencies with other forms of coastal planning documents than LCP's are ineligible for grant funding for updates, further discouraging efforts to update outdated documents."	Public Works Plans and other plans under the Coastal Act are eligible for the Ocean Protection Council's LCP SLR Grant Program, which provides funds to update plans to address SLR. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for planning on the project- or topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Please refer to the Introduction for a description of grants that are available for sea level rise planning efforts, including several that are not specific to LCP work.
Lyn Krieger, Director, Ventura County Harbor Department	Planning	"We support the consideration of the project life when reviewing specific projects for sea level rise issues. However, we do not agree that a 75-100 year project life is always a reasonable measure, and urge that some standards be adopted for the estimated life of building types before significant renovation is required. Marinas, for example, have a lesser expected life than most structures, and utility structures have less than apartments or hotels. There are some industry guidelines that could be utilized as a baseline for this exercise. Some local agencies have such standards in place already, particularly where ground leases are timed in an effort to coincide with building life."	Revisions have been made to the section on project life in Step 1 of Chapter 6 (Addressing SLR in CDPs).

Name/ Affiliation	Key Topic	Comment	Response
Lyn Krieger, Director, Ventura County Harbor Department	Planning	"The draft guidelines repeatedly mention new developments, but there is little in the document about reinvestment in existing properties. What is the expectation of the Commission for review of such properties? At what level of renovation might review occur? What about property redevelopment when the intent is project replacement in kind?"	Chapter 7 (Adaptation Strategies) presents a broad array of adaptation options, including a section on options for existing development as well as a short description of redevelopment. The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation
Lyn Krieger, Director, Ventura County Harbor Department	Best Available Science	"The projected effects of sea level rise are evolving as data becomes available and the science is refined. How will these guidelines and/or any subsequent regulations reflect this continuing evolution of scientific data so as not to require agencies to conduct studies or seek information that is no longer relevant?"	As stated in the document, this Guidance will be updated as necessary to reflect updated science and possible resources.
Lyn Krieger, Director, Ventura County Harbor Department	Adaptation	"Harbors already give consideration to and plan for ocean intrusion. The Guidance Document presents some ambiguities for the protection of harbors from potential flooding due to sea level rise. As you must be aware, harbor flood defenses include jetties, seawalls, groins, tide gates, storm water pump systems, groundwater dewatering systems, and elevated finished floor elevations. However, these harbor flood defenses are only effective when working together. These flood defense measures, especially the public and private seawalls, act as a unit to protect residential, commercial and industrial properties and facilities around in coastal zone including boat yards, fuel stations, marine supply facilities, recreational facilities, tourist-serving facilities, houses, hotels, and restaurants. These flood protection defenses allow for commercial and recreational boating and fishing activities, as well as safe beach access for residents and visitors. We believe that the Guidance Document should be revised to reflect that several items in the Guidance Document would not be applicable in urbanized areas or to the maintenance, replacement or protection measures of property and facilities in, around and adjacent to a harbor's flood protection facilities."	Chapter 7 (Adaptation Strategies) presents guidance on how to employ a wide range of adaptation strategies. These strategies are intended to be considered on a location specific and case by case basis, and may not be applicable in all situations. It is expected that strategies will be implemented in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
CA Coastal Sediment Management Workgroup	Planning	"Table 13 (page 139)...CSMW has several postings relative to the subject, most notable their "California Beach Erosion Assessment Survey" which identifies numerous Beach Erosion Concern Areas (BECAs) throughout the state where beach erosion has been identified as of concern to some regional, state or federal entity."	The CSMW website is listed in the Appendix B table showing general resources for information on beach, bluff and dune erosion, but the description was edited to specifically call out the California Beach Erosion Assessment Survey from 2010.
CA Coastal Sediment Management Workgroup	Adaptation	"Table 16 (page 149): Community Level Planning- Regional Sediment Management (RSM) Program/Description: Suggested additional language 'To be most effective, RSM will...protect and enhance coastal ecosystems and maintain safe access to beaches for recreational purposes [']. General Comment: It might be helpful to the local community to understand that Coastal RSM Plans may have already been developed for the region within which the LCP may lie, and therefore the LCP could "support" (not "supporting") management activities identified by the Coastal RSM Plan. As currently written, the language gives the idea that each LCP would develop their own RSM Plan, perhaps this is the intent, but even if so the local RSM Plan would benefit from the regional RSM Plan."	Adaptation strategies have been moved to Chapter 7. This change was made as suggested.
CA Coastal Sediment Management Workgroup	Adaptation	"Table 18 (page 153) Shoreline Management and Shore Protection Measures- Beach nourishment and replenishment/ Applicability: Section could include reference to CSMW website resources that could help with 'the LCP [establishing] criteria for design, construction and management of the nourishment area ... "	Change was made as suggested.
CA Coastal Sediment Management Workgroup	Adaptation	"Table 18 (page 153) Shoreline Management and Shore Protection Measures-- Dredging Management/ Applicability: in the spirit of local RSM, recommend that the language be slightly altered to ""LCPs should facilitate delivery of clean sediment to nearby beaches identified in a RSM Plan applicable to the LCP area where sediment is needed"	Change was made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
CA Coastal Sediment Management Workgroup	Adaptation	"Table 18 (page 153) Shoreline Management and Shore Protection Measures-- Maintenance or restoration of natural sand supply/Applicability: Standards could also recognize that sea level rise will result in reduced gradients which could reduce transport capability, and promote avoidance of development in the river's flood plain as well as dam removal/sand bypassing"	Change was made as suggested.
City and County of San Francisco	Best Available Science	[Paraphrased:] Because the extreme NRC values (i.e. either end of the projected range) are considered "less than likely scenarios", the guidance should include numbers labeled in the NRC report as "projections," ((e.g. 5.7 ± 2.0 inches by 2030, 11.0 ± 3.6 inches by 2050, and 36.2 ± 10.0 inches by 2100) as these are the more likely sea level rise amount identified by the report.	Description of the NRC "projections" versus the full range has been added to Appendix A and is referenced in Chapter 3.
City and County of San Francisco	Policy and Legal analysis	"seeking... Assurance that if the CCSF engages in good-faith effort to update our LCP, necessary Coastal Development Permits sought by CCSF while the LCP update is underway will be processed in a timely way under the current regulatory structure and will not be delayed while the updated LCP is being considered and/or in process; and assistance with the identification of funding resources for CCSF's future update to the LCP."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. Projects will continue to be reviewed on a case by case basis. The Introduction has descriptions of grant programs available to assist with sea level rise planning.
Hanna Muegge, Public Citizen	Planning	[Paraphrased:] There is a need for funding, research, and avenues for information sharing to support local governments as they carry out actions suggested in the Guidance.	Language was added to the Guidance regarding the need for regional coordination, funding, and information sharing. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Hanna Muegge, Public Citizen	Best Available Science	"In order to protect coastal communities against future natural events, I would encourage that the government use the A2 scenario for SLR which is more rational than the B1 scenario."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the regional sea level rise projections from the 2012 NRC report or an equivalent resource. Language has been added to Chapter 3 regarding the use of scenario-based planning to address the range of sea level rise projections and in order to get a full picture of possible impacts.
Hanna Muegge, Public Citizen	Adaptation	[Paraphrased:] Emphasis is needed on managed retreat, benefits of intact ecosystems (e.g. habitat, storm buffering)	Benefits of intact ecosystems have been added to Chapter 7 (Adaptation Strategies). This chapter also discusses managed retreat and other related strategies.

Name/ Affiliation	Key Topic	Comment	Response
Hanna Muegge, Public Citizen	Adaptation	[Paraphrased:] Emphasis is needed on hard structures causing loss of public resources	A description of the possible negative impacts of hard structures has been added to Chapter 7 (Adaptation Strategies).
Hanna Muegge, Public Citizen	Policy and Legal analysis	"needs more clarity and further consideration of exactly how policy makers will do this and how these policies will be carried out"	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Policy and Legal analysis	[Paraphrased:] The Guidance is overly focused on people and property, and needs more focus on avoiding impacts to coastal resources like public access, habitats, and recreation.	Thank you for your comment. Information regarding the protection of natural resources is reflected in Step 3 in both the LCP and CDP Guidance Chapters, and section C of the Guiding Principles is devoted to maximizing protection of public access, recreation, and sensitive coastal resources.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Planning	[Paraphrased:] The Guidance should cross reference related documents from other state agencies and better explain how users should consider them.	The Introduction of the document explains the context in which the Guidance has been developed, highlighting recent efforts to prepare for sea level rise from many state agencies and in light of other efforts. Appendix C lists examples of sea level rise preparations from other state agencies with hyperlinks to provide additional information.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Planning	[Paraphrased:] The Guidance should include the importance of other agencies in LCP planning, including CalTrans and Parks and Recreation.	A section on sharing information and coordinating with other agencies has been added to Chapter 5 (Addressing SLR in LCPs).

Name/ Affiliation	Key Topic	Comment	Response
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Funding	"This Guidance document must recognize the very significant resource need, and propose a state-level solution that would provide an ongoing, dedicated funding stream to support local planning"	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction for information regarding grant opportunities. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. This issue is important for addressing sea level rise, and it requires work beyond the scope of the Coastal Commission alone. Staff considered this issue during the revisions to the Guidance, and will continue to coordinate with other state agencies on these challenges.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Planning	[Paraphrased:] The Guidance should discuss other local plans related to sea level rise adaptation-- including Local Hazard Mitigation Plans, General Plans, Regional Sediment Management Plans--and suggest an approach to building an integrated coastal resilience policy through a combination of these planning tools	A section on sharing information and coordinating with other planning efforts, for example, Local Hazard Mitigation Plans and General Plans, has been added to Chapter 5 (Addressing SLR in LCPs). Regional Sediment Management Plans are noted in Chapter 7 (Adaptation Strategies).
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Best Available Science	[Paraphrased:] The Guidance should identify regionally-specific sea level rise projections that could be considered better than the NRC report.	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use those sources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Monitoring, Research Needs, and Next Steps	[Paraphrased:] The Guidance should acknowledge topics that affect sea-level rise planning in need of more research, including changes in fluvial flood frequency and magnitude, changes in local precipitation patterns, changes in coastal storm frequency and magnitude, local sediment transport processes and changes, marsh accretion processes, and sediment budgets	Additions have been made to Chapter 9 (Next Steps).

Name/ Affiliation	Key Topic	Comment	Response
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Adaptation	"Proposed new development in known future hazard zones should be required to overcome a strong presumption of incompatibility, and any permits should contain conditions that mitigate impacts to Coastal Act Resources (i.e., that the development will be engineered to accommodate coastal change, including habitat evolution, and that the development will never seek permits for armoring of any kind)"	A number of adaptation strategies including those related to standards or specific practices for planning and siting new development are presented in Chapter 7 (Adaptation Strategies). It is expected that strategies will be implemented on a case by case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Adaptation	"the principles should direct applicants and municipalities to prioritize green infrastructure approaches to minimizing hazard risk – for both new and existing development. Grey approaches should never be permitted for new development"	Adaptation strategies related to green infrastructure are presented in Chapter 7 (Adaptation Strategies) and an emphasis on natural infrastructure is noted in the Guiding Principles. It is expected that strategies will be implemented on a case by case basis in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Adaptation	"The section discussing application for new development in hazard zones should be reframed to discourage applications for development in the future locations of beaches and other coastal habitat (p52). There should be no loss of future habitat from the combined impacts of SLR and development"	A section in Chapter 7 (Adaptation Strategies) addresses coastal habitats (ESHA, Wetlands, etc.) and states that any existing policies should be evaluated to determine the extent to which they address changes from sea level rise. Additional policies may be needed to limit development in areas upland of wetlands, wildlife corridors, and important habitat linkages; to increase the size of buffer zones between development and natural resource areas; and to establish adaptive management plans for natural resource areas that account for sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Adaptation	"We recommend that mitigation be required any time new development would reasonably be expected to constrain the evolution of coastal natural habitat as sea level rises. In addition, the discussion of minimizing impacts on coastal wetlands and Environmentally Sensitive Habitat Areas would be made stronger by treating the construction of structures in future wetlands the same way we treat construction in existing wetlands – by forbidding or mitigating it (p57)."	The intent of step 3 of the LCP and CDP planning processes is to determine how projects may impact coastal resources if and when sea level rise causes them to move or shift over time. Many of the adaptation strategies included in Chapter 7 (Adaptation Strategies) suggest limiting development in vulnerable areas as well as a need to protect open space. Also, as noted in Chapter 9 (Next Steps), Coastal Commission staff has initiated a Project of Special Merit to build upon the Commission's existing efforts to mitigate for the adverse impacts of shoreline development projects to public access and recreation by working with beach ecologists and a valuation economist to develop a method to quantify impacts to biological resources and beach ecology. The Coastal Act policies that limit development in wetlands and environmentally sensitive habitat areas (Coastal Act sections 30233 and 30240(a)) are stricter than Coastal Act policies regarding development adjacent to sensitive habitat (Coastal Act sections 30231 and 30240(b)). The Commission and local governments nonetheless have significant authority to anticipate future habitat changes when regulating development close to existing habitat.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Planning	[Paraphrased:] Involve CalTrans in sea-level rise planning, especially because Coastal Act resources are at substantial risk from being lost in the squeeze between sea level rise and the PCH	As stated throughout the Guidance, the Commission will continue to coordinate with agencies including Caltrans in sea level rise planning work.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Adaptation	[Paraphrased:] Further discuss benefits of natural ecosystems like wetlands (e.g. buffering capacity, carbon sequestration) and prioritize restoration and preservation of these systems as adaptation strategies (including rolling easements, specifically).	A brief section on the benefits of different adaptation strategies has been added to Chapter 7 (Adaptation Strategies). The variety of strategies presented in this chapter should be implemented on a case-by-case basis and in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Planning	"It may be valuable to set up a paradigm for assessing both primary and secondary impacts from SRL (p39). Primary impacts are those that occur as a direct result of sea level rise interacting with the landscape – things like inundation, erosion and saltwater intrusion. Secondary impacts are those that result from the actions people take in response to sea level rise – loss of habitat as a result of seawall construction, etc. Both of these impacts should be discussed and evaluated in LCP amendments. "	Thank you for your comment. This idea is reflected in the step-by-step planning processes for LCPs and CDPs, where the guidance specifies that the impacts of adaptation measures themselves should be included in the analysis.

Name/ Affiliation	Key Topic	Comment	Response
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Monitoring, Research Needs, and Next Steps	[Paraphrased:] Set up rules of thumb for dealing with lack of information about projected saltwater intrusion into groundwater, and encourage a statewide effort to research this topic.	Chapter 9 (Next Steps) lists the need for more research into the potential effects of sea level rise on coastal aquifers. Identifying the incidence and severity of saltwater intrusion at the scale of individual aquifers is beyond the scope of this document, though the Commission recognizes that criteria for mitigation or response to saltwater intrusion need to be developed.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Planning	"much of the Example 3 (p46-48) is confusing and impractical. Specifically, in the absence of any additional modeling in the local area, there would not be adequate information on coastal erosion, sediment supply, habitat evolution, or engineering-level information on infrastructure assets to make reasonable management recommendations"	The example is intended to cover only step 3 in the planning process, which covers risks to coastal resources, and is meant to help clarify what is meant by the terms defined in this step (exposure, sensitivity, adaptive capacity and so on). Steps 1 and 2 give greater detail on the modelling and other analyses that go into assessing resource impacts and making final management decisions.
Sarah Newkirk, Coastal Project Director, The Nature Conservancy	Monitoring, Research Needs, and Next Steps	[Paraphrased:] Future research needs should include the inadequacy of existing habitat evolution models (i.e., SLAMM) to estimate the future locations of west coast marshes, as a result of the seasonal changes in the hydrology of many of our coastal confluences;	Additions have been made to Chapter 9 (Next Steps).
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	"Connect the Draft with California's existing climate adaptation guidance: The State of California has developed related and strongly aligned climate change adaptation guidance. We commend the Commission on its efforts to make state level guidance actionable for permit applicants and local jurisdictions within the coastal zone. The Final Draft could make the State's pre-existing climate adaptation policy context explicit in the Executive Summary. To demonstrate the overlap between the Draft and existing state efforts on climate adaptation, wherever applicable, the recommendations that follow reference to or identify opportunities for the Final Draft to complement state and other agency guidance and legislation."	The Adaptation Planning Guide (2012) is referenced in the Introduction and is included in Appendix C (Resources for Addressing SLR). Commission staff is coordinating with other agencies to ensure consistency. However, this Guidance is specifically related to addressing sea level rise in Coastal Commission planning efforts, while the Adaptation Planning Guide provides a broader framework for addressing climate change impacts statewide.

Name/ Affiliation	Key Topic	Comment	Response
Meg Caldwell, Executive Director, Center for Ocean Solutions	Policy and Legal analysis	"Clarify Concepts within the Principles for Addressing Sea-Level Rise in the Coastal Zone: The Draft guidance is based on four principles derived predominantly from the Coastal Act's requirements. Each principle is comprised of multiple concepts raised by the challenges of sea-level rise. The Final Draft could clarify that the placement of a concept within one of the principles does not preclude overlap of that concept with other principles. For example, the third principle addresses Maximizing Protection of Public Access, Recreation, and Sensitive Coastal Resources. Concept 14, which pertains to including the best available information on resource valuation in mitigation of coastal resource impacts, is listed under this principle. However, this concept also applies under the first principle, pertaining to Using Science to Guide Decisions."	Clarification that many Guiding Principles are interrelated has been made.
Meg Caldwell, Executive Director, Center for Ocean Solutions	Best Available Science	"Explain the process for updating the best available science: The Draft discusses how the best available science should be used in planning and regulatory actions, and refers to the 2012 National Research Council (NRC) Report as the current best available science. The Draft notes that the best available science will have to be updated in the future to reflect significant changes in the science of sea-level rise. The Final Draft could clarify how updates on the best available science will be distributed for uptake at the local level. For example, the Commission staff may provide updates through staff reports or briefings from scientific experts, and may rely on non-advocacy expert organizations to facilitate these and other processes.'	As stated in the document, this Guidance will be updated as necessary to reflect updated science and possible resources. However, staff appreciates your comment and has taken it into consideration.

Name/ Affiliation	Key Topic	Comment	Response
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	<p>"Require assessment of the benefits provided by intact ecological systems:</p> <p>To better align the Coastal Commission's Draft with California's goal of preserving and stewarding state lands and natural resources articulated in the Governor's Environmental Goals and Policy Report, the Final Draft could require an assessment of the benefits that intact ecological systems provide to coastal communities. Guiding the agency to incorporate such assessments into Local Coastal Programs (LCPs) and Coastal Development Permits (CDPs) is consistent with a key action identified in the Governor's Environmental Goals and Policy Report: building resilience in natural systems. The Final Draft could provide the necessary detail for how the Coastal Commission, project applicants, and local jurisdictions could use benefits assessments to advance the Governor's stewardship goal within the coastal zone. For example, intact coastal dune ecosystems and wetland habitats can attenuate wave action and provide coastal protection to coastal and inland communities. The Center for Ocean Solutions and the Natural Capital Project recently completed vulnerability assessments for the Greater Monterey County and the Santa Cruz Integrated Regional Water Management planning processes evaluating the role that natural coastal habitats play in providing coastal protection from sea-level rise. By assessing the opportunities and benefits that existing ecological resources provide (such as intact coastal dunes), the Coastal Commission, local planners, and individual applicants can better understand the social, economic, and ecological consequences of their permitting decisions. We suggest explicitly requiring assessment of these benefits in the following Sections of the Final Draft"</p>	<p>The Commission recognizes that benefit valuation of ecological systems is an area of continuing and emerging research and policy development that will require continued coordination. Currently, the Commission is conducting additional work on developing a method to quantify impacts to biological resources and beach ecology as is described in Chapter 9 (Next Steps). A brief section on the benefits of different adaptation strategies has also been added to Chapter 7 (Adaptation Strategies).</p>
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	<p>"Section IV Addressing Sea-Level Rise in Local Coastal Programs: The Final Draft could add another step to the Sea-Level Rise Adaptation Planning Process for new and updated Local Coastal Programs. By adding a benefits assessment to Figure 4 as a new Step 3 (after "Identify potential sea-level rise impacts in LCP planning area/segment" and before "Assess risks to coastal resources and development in planning area"), local planning staff can assess the differential effects that loss of ecological resources from sea-level rise will have on a variety of sectors, including vulnerable human populations, public health, public recreation, and the economy."</p>	<p>The Commission recognizes that benefit valuation of ecological systems is an area of continuing and emerging research and policy development that will require continued coordination. Currently, the Commission is conducting additional work on developing a method to quantify impacts to biological resources and beach ecology as is described in Chapter 9 (Next Steps). A brief section on the benefits of different adaptation strategies has also been added to Chapter 7 (Adaptation Strategies).</p>

Name/ Affiliation	Key Topic	Comment	Response
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	"Section V Addressing Sea-Level Rise in Coastal Development Permits: The Final Draft could also add another step to the Steps for Addressing Sea- Level Rise in Coastal Development Permits. By adding a benefits assessment to Figure 6 as a new Step 3 (after "Determine how sea-level rise impacts may constrain the project site" and before "Determine how the project may impact coastal resources over time, considering sea-level rise"), project applicants and local and Coastal Commission permitting staff can assess how sea-level rise will affect the benefits provided by existing resources."	The Commission recognizes that benefit valuation of ecological systems is an area of continuing and emerging research and policy development that will require continued coordination. Currently, the Commission is conducting additional work on developing a method to quantify impacts to biological resources and beach ecology as is described in Chapter 9 (Next Steps). A brief section on the benefits of different adaptation strategies has also been added to Chapter 7 (Adaptation Strategies).
Meg Caldwell, Executive Director, Center for Ocean Solutions	Monitoring, Research Needs, and Next Steps	"Section VI Additional Research Needs: Further research to understand and value the benefits intact coastal systems provide should be included as a research need in the Final Draft. As noted, analyses of the role natural habitats play in coastal protection have already been completed for the Greater Monterey County and Santa Cruz Integrated Regional Water Management planning processes. This research would also help to advance other research needs identified in the Draft, including Research Needs 3, 4, and 5."	Additions have been made to Chapter 9 (Next Steps).

Name/ Affiliation	Key Topic	Comment	Response
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	<p>"Incorporate human systems into assessment of risks from sea-level rise to coastal resources and development in LCP planning areas/segments: Step 3 of the Draft's process to address sea-level rise in local coastal programs involves assessing the potential risks from sea-level rise to coastal resources and development in the LCP planning area/segment. As sea levels rise, the severity of more damaging storms will increase—particularly for communities directly adjacent to the coast. In addition to considering existing and planned development, the Final Draft could call for consideration of the human populations and social and economic systems that are or will be impacted by sea level rise. This would align with the goal of building healthy and sustainable communities in the Governor's Environmental Goals and Policy Report. Key actions identified in the Governor's Environmental Goals and Policy Report include developing "plans to help communities manage planned retreat from rising sea levels," and supporting and investing in active transportation projects, such as the coastal trail system. The Draft's guidance regarding adaptation strategies and existing work on the California Coastal Trail advance these goals. However, information on how and when to assess sea-level rise impacts to human systems should be explicitly included in Step 3 of the Final Draft's process for LCPs. The Department of Water Resources' published guidance on analyzing adaptive capacity and considering disadvantaged communities is a replicable example. The analysis of the role natural habitats play in coastal planning processes completed for the Santa Cruz Integrated Regional Water Management planning process applied the Department of Water Resources guidance²⁸ to consider the potential consequences of alternative management decisions on disadvantaged communities."</p>	<p>Step 3 specifically calls out assessing impacts to the resources as defined in Chapter 3 of the Coastal Act, which includes development, critical infrastructure, and other resources related to social and economic well-being. Language has been added to the introduction of Chapter 5 (Addressing SLR in LCPs) suggesting that other topics of interest, such as vulnerable populations, be included in these analyses as part of the planning process.</p>

Name/ Affiliation	Key Topic	Comment	Response
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	"Investigate opportunities for regional mitigation: The Draft recommends that Coastal Commission staff, local planners, and project applicants address the cumulative impacts and regional contexts of planning and permitting decisions, and notes the importance of providing mitigation of unavoidable public coastal resource impacts to maximize protection of public access, recreation, and sensitive coastal resources. There may be lessons learned from existing regional mitigation efforts that the Coastal Commission could apply to Local Coastal Programs. Some regional mitigation efforts to consider include the San Diego Association of Governments' (SANDAG) Environmental Mitigation Program, the Santa Monica Mountains Conservancy, and the Big Sur Transfer of Development Credits program."	Thank you for your comment and review of the Guidance. We have made note of your suggestion.
Meg Caldwell, Executive Director, Center for Ocean Solutions	Monitoring, Research Needs, and Next Steps	"Investigate opportunities for regional monitoring programs: Steps 4 and 5 of the Draft's Planning Process for Coastal Development Permits require monitoring. The Final Draft could explain the benefits of consistent monitoring practices and encourage a regional monitoring approach that supports a more nuanced understanding of individual and cumulative project impacts across a broader geographic scale (e.g., littoral cells, biogeographical regions). This information could also contribute to Coastal Commission staff's understanding of how new projects could be designed to avoid or minimize impacts. The monitoring approach used for California's Marine Protected Areas network could provide one model for a regional monitoring program for Coastal Development Permits. It would be important for the Coastal Commission to explore and identify mechanisms to make such a monitoring program self-enforcing, minimizing costs associated with running the program and ensuring its consistent implementation over time."	Revisions have been made to the monitoring section in Chapter 9 (Next Steps) regarding the importance of monitoring the impacts of coastal development and the effectiveness of various adaptation strategies.
Meg Caldwell, Executive Director, Center for Ocean Solutions	Planning	"LCP Vulnerability Analysis: The Draft references design constraints for parcels identified through LCP vulnerability analysis. The Draft also provides a Sea- Level Rise Adaptation Planning Process for new and updated LCPs. This process could include assessment of the benefits of existing coastal resources and/or potential opportunities to restore coastal resources. As noted above, analyses of the role natural habitats play in coastal protection have already been completed for the Greater Monterey County and Santa Cruz Integrated Regional Water Management planning processes. Thus, we know that such an approach is feasible and produces actionable information for coastal community planners and decisionmakers."	A section describing the benefits of natural infrastructure has been added to Chapter 7 (Adaptation Strategies). Restoration is also included as a potential adaptation strategy.

Name/ Affiliation	Key Topic	Comment	Response
Meg Caldwell, Executive Director, Center for Ocean Solutions	Adaptation	<p>"Adaptation Measures: The Draft identifies potential adaptation measures for use in coastal development permitting and planning efforts. The Tables could include examples of both 'model' LCPs with these adaptation measures already in place, and examples of these adaptation measures currently in use in California, wherever available; tangible examples would increase the impact and utility of these Tables.</p> <ul style="list-style-type: none"> • Living Shoreline Techniques: The Draft refers to soft armoring techniques, including living shorelines. The Final Draft's definition of "living shoreline" could more clearly explain its role in implementing the policy of enhancing the "natural resource areas, and dune restoration." Living shorelines as an approach should preference designs that foster natural processes. • Rolling Public Trust: The Draft refers applicants to the State Lands Commission when public trust lands might be involved in project proposals. Table 26 refers to both the Titus 2011 Primer and No Day at the Beach as resources for assessing adaptation measures, in particular rolling easements. The Final Draft could also reference these two resources when it directs applicants to the State Lands Commission for public trust lands. These resources discuss the rolling public trust supported by California case law. The Final Draft could also reference California case law, which elucidates the breadth of the state's public trust doctrine." 	Adaptation strategies have been moved to Chapter 7, and this chapter includes a brief section that discusses the benefits of natural infrastructure and living shorelines. Greater detail on rolling easements has also been added. A chapter on the legal context of adaptation planning has been added to the Guidance. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
John Corn, Axelson & Corn, Attorneys at Law	Policy and Legal analysis	"The Guidance may be interpreted by many as a regulatory document in the future."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone.
John Corn, Axelson & Corn, Attorneys at Law	Best Available Science	"The Guidance contains discrepancies in SLR projections."	Updates have been made to the sea level rise projections tables to ensure consistency throughout the document.
John Corn, Axelson & Corn, Attorneys at Law	Planning	"The highly technical baseline analysis of coastal conditions called for in the Local Hazard Condition Analysis will be costly and time-intensive."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.
John Corn, Axelson & Corn, Attorneys at Law	Policy and Legal analysis	"There will be unpredictability associated with certifying LCPs and Implementation Plans in conformance with the Guidance if it morphs into a set of regulations."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone; LCPs and Implementation Plans will continue to be reviewed on a case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
John Corn, Axelson & Corn, Attorneys at Law	Funding	"There will be significant fiscal impacts on coastal communities in an effort to comply with the Guidance if it morphs into a set of regulations."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.
John Corn, Axelson & Corn, Attorneys at Law	Best Available Science	"The Guidance does not take into account studies and papers that have been published by Dr. Scott Sherman of Scripps Institution of Oceanography ("SIO"), Dr. Reinhart Flick of SIO and the Commission's own coastal engineer, Lesley Ewing, showing that (a) SLR in Southern California is projected to be significantly lower than SLR in the Central and Northern Coast regions of California and the rest of the nation, and (b) beach sand nourishment at a number of locations in Southern California would mitigate against projected inundation of land along the coast."	Commission staff was not aware of the research by Dr. Scott Sherman at SIO. After searching for the SIO directory and for any research on sea level rise by Dr. Scott Sherman, staff determined that the researcher in question was Dr. Scott Jenkins. Through e-mail correspondence, Dr. Scott Jenkins told staff that he has not done research on sea level rise projections. About a decade ago, Dr. Jenkins did write a paper noting that the San Diego shoreline would need large amounts of new sand to maintain beaches with a large amount of sea level rise. The research by Dr. Flick and Ms. Ewing examined the volumes of sand necessary to maintain beaches for various sea level rise scenarios, also finding that large volumes of sand might be needed for large amounts of sea level rise. Neither the paper by Dr. Scott Jenkins nor the paper by Dr. Reinhart Flick and Ms. Ewing say that SLR in Southern California is projected to be significantly lower than SLR in the Central or Northern Coast regions of California and the rest of the nation. In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the regional projections from the 2012 NRC report or an equivalent resource. Chapter 3 and Appendix A include a description of best available science on sea level rise at global, national, and regional scales. As broad statewide guidance, this document does not include highly localized details but is rather a framework for addressing SLR in Coastal Commission-related land-use planning. Beach nourishment may be an adequate adaptation strategy in a number of locations or at a variety of time scales. As stated in Chapter 7, adaptation strategies should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
John Corn, Axelson & Corn, Attorneys at Law	Planning	"It does not appear that the Commission has coordinated its efforts on SLR with the Department of Parks and Recreation's Facilities Division, which manages the state's beach restoration program formerly managed by the Department of Boating & Waterways (AB 64, The Public Beach Restoration Act, Laws of 1999), nor does it appear that the Guidance has been adequately vetted by state agencies, departments and commissions that have coastal jurisdiction, including the state's Ocean Protection Council."	Thank you for your comment. The Commission has been and will continue to coordinate with other state agencies.
John Corn, Axelson & Corn, Attorneys at Law	Adaptation	"The Guidance does not adequately address sand replenishment (aka beach renourishment), especially on crowded urban beaches, as a means of dealing with SLR. It has been documented that each foot of SLR can be neutralized with one foot of sand placement. California's economy, beach environment, and the safety of beach goers is highly dependent on the availability of sandy beaches. Retreat from an potentially advancing sea will is neither feasible nor desirable. Humankind's massive and unrelenting development of lands within the coastal watershed, along with artificial harbors and jetties, has permanent disrupted nature's sediment delivery systems to the beach. As a result, some areas of our coastline are far more sensitive to SLR than they otherwise would be. The responsible, and most cost effective, way to deal with SLR is to restore what society has taken – a sandy beach – through artificial means. Beach replenishment is not only the best way to confront SLR, but is in the best interests of most Californians or its millions of annual visitors who come to enjoy its sandy beaches."	Beach nourishment is identified as a possible adaptation strategy in Chapter 7 (Adaptation Strategies) of the document. As stated in the document, these adaptation strategies should be considered on a location specific and case by case basis.
Megan Herzog, Sean Hecht, Environmental Law Center, UCLA	Policy and Legal analysis	"The Guidance should present background information about relevant legal doctrines to help local governments understand the nature of the legal opportunities and challenges associated with sea-level rise adaptation. For instance, the Guidance could introduce the constitutional takings doctrine and its parameters so local governments understand broadly how takings and private property issues might interact with sea-level rise adaptation."	A chapter on the legal context of adaptation planning has been added to the Guidance.

Name/ Affiliation	Key Topic	Comment	Response
Megan Herzog, Sean Hecht, Environmental Law Center, UCLA	Policy and Legal analysis	<p>"In our experience, although local government officials generally express significant concern about private property rights, they may have basic misconceptions of or lack knowledge about the takings doctrine and how it might interact with sea-level rise adaptation. While we agree with the general statement that "[a]gencies implementing the Coastal Act should obtain legal advice regarding specific situations that raise takings concerns," the Guidance's disclaimer about private property rights and the takings doctrine (pp. 20-21) may have unintended adverse consequences. For instance, the brevity of the disclaimer and lack of discussion of the law throughout the Guidance could suggest to local governments that questions of legal risk are unimportant and tangential to the adaptation planning process. Alternatively, the disclaimer's implicit suggestion that private property rights and takings could present a significant obstacle to sea-level rise adaptation might influence local governments to misjudge legal risk or misunderstand the role that legal questions play in sea-level rise adaptation planning. Similarly, background issues relating to implementation of specific provisions of the Coastal Act- which underlies the laws and policies that the Guidance seeks to further- are directly relevant to the planning process, as are issues relating to the Public Trust Doctrine's application to coastal properties. Without background context on the potential relevance of these laws to sea-level rise adaptation planning, local governments might misjudge or misunderstand the relevance of related legal questions to the planning process. Rather than explicitly avoiding any discussion of legal issues, the overall value of the Guidance would be enhanced by incorporating background information about the law and its relevance to sea-level rise adaptation. Background information about the law also would provide relevant context for our following recommendations. Moreover, throughout the document, it would be helpful to tie any specific recommendations in the Guidance that are motivated, allowed, required, or constrained by statutory, regulatory, or other legal authorities to those authorities. This will help local governments and other stakeholders to understand how the Guidance incorporates or relies on those legal authorities and their underlying principles."</p>	<p>A chapter on the legal context of adaptation planning has been added to the Guidance.</p>

Name/ Affiliation	Key Topic	Comment	Response
Megan Herzog, Sean Hecht, Environmental Law Center, UCLA	Adaptation	"In contrast to the technical detail of Steps 1 through 3 in both the LCP planning process and CDP issuance process, however, the Guidance provides little context for what adaptation measure selection or policy and ordinance development entail. Additionally, the main text of the Guidance references no tools or resources for local governments seeking additional information about these processes. We recommend that the Guidance offer a more detailed description of the adaptation measure selection and policy and ordinance development sub-steps of Step 4. In our experience, local governments engaged in sea-level rise adaptation planning find adaptation measure selection and policy and ordinance development particularly challenging to conceptualize and initiate, and would benefit from increased awareness of relevant methods and tools. Discussion of these tools will assist local governments with determining how to proceed, and will raise awareness of specific opportunities and strategies, as well as resources for developing and evaluating those opportunities and strategies, to accomplish Step 4. Moreover, as we discuss further below, the Guidance's description of these sub-steps should acknowledge the value of legal vulnerability assessment as a tool to evaluate the suitability of adaptation alternatives."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Chapter 7 provides a broad array of adaptation strategies, and these strategies should be implemented on a case-by-case in a way that reflects local priorities and goals. Appendix C (Resources for Addressing Sea Level Rise) provides a number of resources that may be useful for completing vulnerability assessments and choosing adaptation measures.
Megan Herzog, Sean Hecht, Environmental Law Center, UCLA	Planning	"Within Step 4 of both the LCP planning process and CDP planning process, the Guidance should explicitly recommend that local governments engage in a legal vulnerability assessment. Just as an assessment of local physical vulnerability enables localities to identify areas for adaptation and manage scientific uncertainty, so does a legal vulnerability assessment enable localities to make smart policy choices in the context of legal uncertainty. An effective legal vulnerability assessment discusses the extent to which a local government may be liable for failure to take adaptation actions and evaluates the relative legal risk of potential adaptation actions. While the adaptation measure selection process ultimately should incorporate other policy judgments in addition to legal risk evaluation, a thorough understanding of how law intersects with adaptation planning will enhance local governments' ability to prioritize and implement adaptation strategies. At the very least, the Guidance should alert local governments that, in general, it would be beneficial to evaluate how the law interacts with various adaptation alternatives identified in Step 4."	A chapter on the legal context of adaptation planning has been added to the Guidance which references the idea of considering legal issues when choosing adaptation strategies.

Name/ Affiliation	Key Topic	Comment	Response
Megan Herzog, Sean Hecht, Environmental Law Center, UCLA	Policy and Legal analysis	"Finally, we wanted to draw the Commission's attention to our recent publication regarding local government sea-level rise adaptation in California. Our article, <i>Combatting Sea-Level Rise in Southern California: How Local Governments Can Seize Adaptation Opportunities While Minimizing Legal Risk</i> , broadly evaluates the risks and opportunities of potential protection, accommodation, and retreat adaptation strategies that local governments could deploy, focusing primarily on four categories of legal issues that may be implicated as localities plan for the impacts of sea-level rise: 1) the California Coastal Act, 2) the public trust doctrine, 3) the constitutional takings doctrine, and 4) the California Environmental Quality Act. Overall, we demonstrate how local governments can harness their existing regulatory authority to support aggressive sea-level rise adaptation strategies and, through proactive planning and smart decisionmaking, mitigate potential legal liabilities. The Commission may find it valuable to reference our article and include it as a listed resource in the "References" section of the document. We are also engaged in development of a model ordinance tool that will help local governments to understand how to incorporate specific adaptation measures into their LCPs to address sea-level rise. Our intention is that local governments may tailor our products to their particular LCP structure, substance, and policy choices."	Thank you for your comment. This article has been added to Appendix C (Resources for Addressing SLR). Additionally, a chapter on the legal implications of sea level rise planning has been added to the Guidance.
Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District	Adaptation	"We request a broader array of flexible adaptation measures be included in the SLR Policy Guidance, which will allow for continued and responsible development. We also suggest reinforcing the point that there are a variety of adaptation strategies available and depending on the geographic area, pattern of development, and existing environment, such strategies should be determined on a case-by-case basis."	Chapter 7 (Adaptation Strategies) includes a wide array of adaptation strategies, including those related to new and existing development in the Coastal Zone. It is expected that these will be applied on a case by case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Additional Language has been added to this chapter to emphasize that the listed strategies are meant to cover a broad array of situations.
Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District	Policy and Legal analysis	"When seeking approvals from a regulatory agency, such as the Commission, the agency's own guidance can likely be seen as requirements for approvals. We encourage reiteration that the SLR Policy Guidance will be a tool for Commission staff to work with agencies to find most reasonable, cost-effective, and balanced solutions in a collaborative manner and is not mandatory."	In the Executive Summary and Introduction, the document states that this material is guidance, not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis.

Name/ Affiliation	Key Topic	Comment	Response
Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District	Adaptation	"The SLR Policy Guidance should more clearly distinguish how it will apply to existing development, new development and redevelopment, in highly urbanized environments, like those located in and around San Diego Bay. Specifically, the document should clarify its application to existing development, new development and redevelopment on State tidelands and open water."	Chapter 7 includes a wide array of adaptation strategies, including sections on existing development and planning and locating new development. These strategies should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. A brief discussion on the shifting public trust boundary has been added to a new chapter on the legal context of adaptation planning.
Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District	Planning	"The SLR Policy Guidance includes a discussion that states the proposed project life expectancy of a project may need to be shortened, if constrained by hazards. However, it is unclear how this approach would be handled during the regulatory review process. To District staffs' knowledge, project life expectancy is not associated as a standard with any other natural hazard and the SLR Policy Guidance does not provide any direction on how this approach would be handled in practice by local or regional agencies. Further direction and a rationale for this approach should be provided to help the District clearly understand the intent of this concept."	Revisions have been made to the sections on project life in Steps 1 and 4 in Chapter 6 (Addressing SLR in CDPs) to provide greater clarity.
Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District	Funding	"Future grant opportunities to update coastal plans should include Port Master Plans. The District is concerned about the cost and resources it would take to implement the SLR Policy Guidance."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the introduction for information regarding grant opportunities, including the OPC LCP Sea-Level Rise Adaptation Grant, which includes Port Master Plan efforts as eligible projects.
Jason Giffen, Director, Environmental and Land Use Mgmt., San Diego Unified Port District	Policy and Legal analysis	"Clarification on what parts of the SLR Policy Guidance are intended to be used by ports versus cities and counties would also be helpful."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning, and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Coastal Act and certified LCPs remain the standard of review for actions in the Coastal Zone.

Name/ Affiliation	Key Topic	Comment	Response
Phil McKenna, President, Gaviota Coast Conservancy	Adaptation	"GCC firmly believes that in the coming years, for the public agencies struggling to deal with unstable conditions and unpredictable events, the best opportunities for reducing, minimizing or even possibly avoiding the worst impacts, will be provided by undeveloped lands such as those along the Gaviota Coast that will allow the maximum amount of flexibility in adapting. Built environments will potentially require more expensive protection or more radical adaptive strategies than natural ones. Therefore, areas such as the Gaviota Coast should be made a first priority for acquisitions, conservation easements and other open space protections."	Chapter 7 (Adaptation Strategies) includes a wide array of adaptation strategies, including those related to acquisitions, conservation easements and other open space protections. It is expected that these will be applied on a case by case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Phil McKenna, President, Gaviota Coast Conservancy	Adaptation	"Developments in vulnerable areas, such as areas close to the shoreline, should be discouraged unless they can be shown to be resilient to increased water levels, such as floating structures, and not require new protective structures."	These concepts are addressed in guiding principles 6 through 8.
Phil McKenna, President, Gaviota Coast Conservancy	Adaptation	"The guidance document states a goal of reducing the impacts of sea level rise on coastal resources. GCC believes that this goal should be expanded to include mitigating or minimizing impacts, as well as adapting to impacts that cannot be reduced."	Many Guiding Principles address avoiding, minimizing, and mitigating impacts. Additionally, many adaptation strategies in Chapter 7 address mitigation.
Phil McKenna, President, Gaviota Coast Conservancy	Adaptation	"GCC strongly supports the goals of adaptive, science-based decision-making. We also support the development of a TDR program for areas such as the Gaviota Coast for incorporation into the County of Santa Barbara Local Coastal Program (LCP)."	Transfer of Development Rights programs (TDRs) are included in Chapter 7 (Adaptation Strategies). It is expected that these strategies will be applied on a case by case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Natural Capital Project	Planning	"The Center for Ocean Solutions' (COS) letter provided to the Work Group draws in part from work we have done together and we fully endorse their comments. We have been working with COS to assess the role that natural habitats play in providing coastal protection and other important benefits (such as recreational opportunities, fish nursery habitat, and improved water quality) to coastal communities that are protected under the Coastal Act. We recently completed vulnerability assessments for the Greater Monterey County and Santa Cruz County Integrated Regional Water Management planning process evaluating the role of natural habitats to reduce vulnerability to ocean storms and sea-level rise. We particularly endorse the COS recommendation to assess the benefits provided by intact ecological systems (Recommendation #4). We are currently working with COS and local jurisdictions in Sonoma, Marin and Monterey/Santa Cruz to assess the benefits provided by ecological systems in the face of sea level rise as part of the counties' Local Coastal Program Sea-level Rise Adaptation Grant programs. Our hope is that the approach developed in these counties can be transferred and applied to other coastal counties to fully incorporate the value of these natural systems in their coastal planning and climate adaptation decisions."	The Commission recognizes that benefit valuation of ecological systems is an area of continuing and emerging research and policy development that will require continued coordination. Currently, the Commission is conducting additional work on developing a method to quantify impacts to biological resources and beach ecology and is described in Chapter 9 (Next Steps). A brief section on the benefits of different adaptation strategies has also been added to Chapter 7 (Adaptation Strategies).
Susan Jordan, Director, CA Coastal Protection Network	General	"Streamline the document to make it more understandable and usable: We agree with the conclusions provided to the Coastal Commission by Dr. Gary Griggs that the document, itself, contains much important information but will be difficult for planners at the local level to understand and utilize. Further, the document lacks feasible, actionable incentives and tools for local planners to actively engage in adaptation to sea level rise."	Thank you for your comment. The Introduction describes grant programs available to local governments to support this work. Appendix C (Resources for Addressing SLR) also contains many resources for local planners. Commission staff intend to conduct trainings and workshops as needed after publication of the Guidance.
Susan Jordan, Director, CA Coastal Protection Network	Best Available Science	"Consider finding a way to connect local planners with the best available data and science via CCC staff: The draft Guidance identifies several databases and other sources of information that may be useful to local planners. However it does not provide a clear path for potential users to access these sources, or instructions on how to understand and apply the data they contain. Without this kind of hands-on assistance, it is unlikely that many jurisdictions will be able to make much progress in incorporating Sea-Level Rise policies into their Local Coastal Plans on a timely basis. Solutions need not be complicated: Commission staff could provide links to relevant information sources on the Commission's website as well as "how to" guidance or other technical assistance regarding issues that are likely to arise across jurisdictions."	As stated in the document, this Guidance will be updated as necessary to reflect updated science and possible resources. The Commission also intends to host trainings for how to use the Guidance and the many resources described within it. However, staff appreciates your comment and will take it into consideration as the Commission works to continue its support of local governments.

Name/ Affiliation	Key Topic	Comment	Response
Susan Jordan, Director, CA Coastal Protection Network	Best Available Science	"Staff could also prepare and make available maps and other information products that depict the range of sea-level rise projections identified in the 2012 National Research Council Report; local planners could use those products to move forward even if they lack the expertise to develop them in-house."	Substantial technical analysis is required to include hydrodynamic processes in sea level rise models. Appendix C (Resources for Addressing SLR) includes a list of available sea level rise mapping tools.
Susan Jordan, Director, CA Coastal Protection Network	Planning	"Prioritize 'Vulnerability Assessments' as a doable first-step: Some jurisdictions, notably Humboldt County, have already completed Vulnerability Assessments that provide them with estimates of the sea-level rise and related hazard risks that they will face over next 50 to 100 years. In the draft Guidance, Vulnerability Assessments are not even mentioned until page 27 and the Guidance only recommends that these types of plans be "considered" on a regional basis. The Guidance could do more to encourage and support Vulnerability Assessments as an initial step in shaping coherent local and regional policies that are rooted in science and appropriate and justifiable changes in land use."	Steps 1 through 4 in Chapter 5 (Addressing SLR in LCPs) essentially constitute the process required for conducting a vulnerability assessment. Language has been added to clarify this point.
Susan Jordan, Director, CA Coastal Protection Network	Policy and Legal analysis	"Incorporate an analysis of 'takings' law and other relevant legal doctrines, as a solid legal foundation will be integral to constructing a successful sea level rise policy that balances protection of private property owners, public access, and public trust resources over the long term. The Commission's recent discussions about seawalls and sea-level rise have highlighted tensions among important public values and legal doctrines, including citizens' right to access the coast, the state's duty to protect and manage public trust tidelands, and the rights of private citizens to protect their property against encroaching threats. 'Takings' law rightly informs the Commission's recommendations and decisions on such matters, including its consideration and approval of sea walls and other coastal armoring infrastructure. Importantly, however, 'takings' law recognizes that the rights of private property owners do not take unilateral priority over other values, rights, and duties such as those identified here. Without a discussion of these important issues, the Commission's draft Guidance lacks a rudder. CCPN acknowledges that this is one of the most difficult areas to tackle, but without doing so, the Commission may undermine its ability to steer a consistent course and advance strong sea level rise policies and decisions over time."	A chapter on the legal context of adaptation planning has been added to the document.

Name/ Affiliation	Key Topic	Comment	Response
Susan Jordan, Director, CA Coastal Protection Network	Policy and Legal analysis	<p>"Better define the 'life of a structure' so both applicants and local planners can be clearly informed of limitations on sea wall construction and maintenance: The Coastal Commission has been debating this issue since August 2013 when it reversed its previous course, established in 2010, that permitted seawalls for a predicted maximum life of twenty years. At the August 2013 hearing on a project in Pacifica in San Mateo County, the Coastal Commission, for the first time, permitted a seawall for the 'life of the structure' and tied the definition of that term to a complicated formula based on the percentage of structural revision. In the January 2014 Commission hearing on the Solana Beach LUP, the Commission started to tackle exactly what is meant by the 'life of the structure' and what should qualify as extending that life in perpetuity—and by implication the seawall that has been permitted to protect it. Commissioners debated what exactly extended the life of a structure and questioned the Pacifica model that had been adopted in that case. They opined that any increase in square footage or major renovation, even if below the 50% threshold adopted in Pacifica, would extend the life of the structure and, thus, the life of the seawall. These rapid changes in the Commission's thinking and approach have introduced uncertainty into the review of seawall applications. As in the 'takings' example above, a clear and thorough discussion about calculation of the 'life of the structure,' and what constitutes extending that life, should be provided to applicants and planners in advance so that efforts to undermine the goal of ultimate seawall removal are not achieved."</p>	<p>Thank you for your comment. A chapter on the legal context of adaptation has been added to the document, though this is an area of ongoing policy development. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.</p>
Susan Jordan, Director, CA Coastal Protection Network	Policy and Legal analysis	<p>"Better define mitigation for impacts of seawall construction and clarify that private property owners bear the burden for appropriate mitigation: Until recently, the Commission only required a sand mitigation fee to mitigate for the anticipated loss of beach sand. However, it has become clear that this sand mitigation fee is wholly inadequate to mitigate for the loss of public access and recreation as the beach recedes, or for the loss of public tidelands and ecosystem resources. While understanding that these fees must be applied on a case-by-case basis, the Commission should seek legal and scientific input to determine how to standardize the assessment of mitigation fees, as well as how to think about mitigation fees in the context of a range of approaches that may appropriately compensate the public for these losses over time."</p>	<p>Mitigation for seawall construction is an area of emerging policy development. As noted in Chapter 9 (Next Steps), Coastal Commission staff has initiated a Project of Special Merit to build upon the Commission's existing efforts to mitigate for the adverse impacts of shoreline development projects to public access and recreation by working with beach ecologists and a valuation economist to develop a method to quantify impacts to biological resources and beach ecology.</p>

Name/ Affiliation	Key Topic	Comment	Response
Susan Jordan, Director, CA Coastal Protection Network	General	"Convene a stakeholder working group to provide feedback on the SLR guidance document before releasing the second draft for public review: In recent discussions CCPN has had with diverse interests from all sides of the aisle, it is clear that some valuable ideas could emerge from such a discussion, despite some tensions among groups. A working group could use an informal roundtable process coordinated by staff with a report on the outcome presented to the Coastal Commission for its consideration. Participants should be drawn from relevant legal, technical, scientific, agency, public, and local government interest groups. Funding from an outside source such as the Ocean Protection Council or State Coastal Conservancy, and/or an outside convener, should be considered so as not to have a negative impact on the Coastal Commission's budget."	While a working group has not been convened between the release of the draft document and the revised document, Commission staff is committed to working with partners to conduct trainings, discuss next steps, and receive feedback. This Guidance represents a first step, and the Commission will continue to work with partners as it moves forward with sea level rise planning work.
Surfrider Foundation	Planning	"Surfrider believes the CCC should encourage local planners/communities to "take a step back", and start with a global view of approaching SLR before delving into specific guidance....we believe the Document could be improved if the CCC stresses to local governments that they must first start from a broad, theoretical perspective in order to truly plan for SLR, and ensure planners are not getting bogged down by tedious details. For example, we encourage the CCC to hold a webinar that broadly focuses on how governments analyze SLR. ...This brief webinar could prompt local planners to think philosophically about SLR before planning concrete strategies. It is imperative that local governments not only understand the importance of planning, but they also realize that without proper planning, taxpayers will assume an inordinate bill. According to a study published in the Proceedings of the National Academy of Sciences, global average storm surge damages could increase from about \$10--\$40 billion per year today to up to \$100,000 billion per year by the end of century, if no adaptation action is taken."	Commission staff intend to conduct trainings and webinars that will include a broad look at sea level rise science and the motivation for incorporating sea level rise into planning documents. Additionally, Chapter 3 (Sea Level Rise Science) and Appendix A (SLR Science and Projections for Future Change) discuss background on sea level rise science, impacts, and the need for scenario-based planning.
Surfrider Foundation	Planning	"As mentioned in the Document and illustrated by current CCC action, it is imperative the CCC continue to work with local governments to update LCPs in order to fully analyze and plan for community impacts from sea level rise, erosion and coastal flooding. These analyses must stress the need to include both public and private infrastructure and determine true risks and costs associated with changing ocean levels for the foreseeable future."	Chapter 9 (Next Steps) is framed as future steps that require collaboration, funding, and expertise. Additional language has also been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions.

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation	Adaptation	"Encourage Establishment of Baselines, Identify thresholds, and Monitor for changes: While we believe the Document did a good job of describing how to prepare for the planning stage of SLR adaptation, we encourage the CCC to work with local governments to understand where thresholds have been exceeded in the past, and where they may be exceeded in the future. While this is overly simplistic, Surfrider believes local planners must establish current baseline conditions, model a range of possible climate change impacts and system responses, monitor actions to detect changes in baseline conditions and determine efficacy of adaptive measures. This initial step must be completed at a broad level, yet specific enough, in order to prepare planners to analyze the brass tax of implementing SLR adaptation."	Thank you for your comment. The need for establishing baseline data and monitoring methods is noted in Chapter 9 (Next Steps). Language has been added emphasizing the need for continued funding and technical support for local governments. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Coastal Commission will continue to work with state and local partners to support planning efforts.
Surfrider Foundation	Policy and Legal analysis	"Zoning and Overlay Zones: The SLR Document rightfully provides guidance for analyzing zoning, however we believe in order to properly zone for SLR, local governments must first understand the legal framework that governs the use and development of land within a community."	A chapter on the legal context of adaptation planning has been added to the document. Additionally, the Commission recognizes that a number of challenges remain, and while this Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning more detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Surfrider Foundation	Adaptation	"Explicitly Evaluate Setbacks and Buffers: The Document would greatly benefit from further analysis of calculating and requiring setbacks (we provide more recommendations in our seawall analysis section below). Local governments must understand how setbacks are a critical component to SLR planning. Surfrider believes local government should be required to leave open space that support natural and beneficial functions (such as wetlands that prevent runoff and flooding). Governments should increase mandatory setbacks from the coast, establish setbacks based upon projected shoreline position using calculations of increased flood and/or erosion rates, or create a tiered setback system permitting smaller structures with less of a setback and requiring greater setbacks for larger development. Governments could require that development adjacent to the shore leave buffers to provide natural protection to development while allowing for upland migration of beaches and wetlands."	Chapter 7 of the document presents a variety of adaptation options, including setbacks and buffers. These options will likely be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level.
Surfrider Foundation	Adaptation	"Rebuilding Restrictions: Surfrider supports local governments limiting a property owner's ability to rebuild structures destroyed by natural hazards, such as flooding. Governments can limit when and how structures are rebuilt by prohibiting reconstruction, or conditioning redevelopment on a landowner's agreement not to armor in the future."	Thank you for your comment. Options such as these are reflected in the adaptation strategies presented in Chapter 7.

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation	Adaptation	"Living and soft structures: We were pleased to see recommendations for "living shorelines". Surfrider believes governments could create permitting programs to require the use of soft-structure techniques where feasible in order to lessen environmental impacts of shoreline armoring. Living shorelines, restoration projects (i.e. kelp, wetlands, etc), vegetative plantings/organic materials (e.g., biologs, matting, oysters beds), are all valid ways to keep sediment in place and reduce wave energy. "	Thank you for your comment. Options such as these are reflected in the adaptation strategies presented in Chapter 7.
Surfrider Foundation	Adaptation	"The Document includes vague language about setbacks. 'Require new structures to be set back a sufficient distance landward... For blufftop development, ensure development is set back from the bluff edge far enough that it will not be endangered by erosion, including sea-level rise over the life of the structure, without the use of any shoreline protective device, to the maximum extent feasible.' Surfrider agrees with the last part of the sentence, but we believe the suggestion for "sufficient distance" is too arbitrary. Seawall and bluff top set back must address specific requirements that are taken in context with SLR."	This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level. Adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. The "sufficient distance" for a setback will continue to be determined based on site-specific analyses of sea level rise, erosion, and related coastal hazards, as identified in Appendix B.
Surfrider Foundation	Policy and Legal analysis	"Surfrider believes that [setback] policy needs to be teased out for the SLR Document, and we urge CCC Staff to clarify how setbacks are calculated and provide clear guidance to local planner in light of SLR."	This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level. Adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. The "sufficient distance" for a setback will continue to be determined based on site-specific analyses of sea level rise, erosion, and related coastal hazards, as identified in Appendix B.
Surfrider Foundation	Policy and Legal analysis	"Another example of language that needs clarity is: "Add conditions to shoreline protective devices that limit authorization of the device to the life of the existing development being protected". As mentioned in the above section, Surfrider fundamentally believes that seawalls MUST have clear triggers for review/removal."	Review and removal of seawalls is an area of ongoing policy development. This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level. Adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation	Policy and Legal analysis	<p>"• Make sure that potential access, recreation, shoreline sand supply, and habitat impacts are evaluated and adequately mitigated. When the "real" and "complete" costs of mitigation are calculated appropriately, it may have a deterrent effect upon prospective armoring projects, as the costs will begin to outweigh the benefits to the property owner. If implemented effectively and consistently, this may act to reduce the number of armoring projects that even make it before the Commission; • Each seawall permit should analyze the "cost of removal of seawall" and managed retreat of existing structures; • If seawall is on public land and blocks sand and recreation, State Lands should require some type of lease and mitigation for use of the public trust; • Incorporate other means to combat erosion instead of blanket seawalls, based on some of the examples listed above about living shorelines and soft structures; • Make sure that any armoring has a clear definition of substantial redevelopment of the existing structure (i.e. clear triggers); • Make sure there are armoring removal provisions and/or an identified financial mechanism (i.e. seawall removal bond) to finance the armoring removal upon expiration of the armoring permit; • Work to establish some kind of impact threshold for impacts to access, recreation, and habitat which, when the thresholds are exceeded, it triggers expiration of permit."</p>	<p>Review and removal of seawalls as well as mitigation for negative impacts to coastal resources from seawalls is an area of ongoing policy development. This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level. Adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.</p>
Surfrider Foundation	Monitoring, Research Needs, and Next Steps	<p>"Beach fill projects are continuously evaluated on a case-by-case basis, though many of their impacts are similar, justifying the need for guidance. As experienced during the recent SANDAG project review CCC staff had unintentionally left out monitoring and protection of surfing resources from their analysis and recommendations. Standardized guidance for determining and minimizing potential surfing impacts from placed sand along beaches with both sandy and rocky nearshore environments should be established. Working with the surfing community, CCC should develop standard programs for monitoring impacts, similar to those utilized by Surfrider Foundation at the SANDAG project, and monitoring should be required of project applicants to ensure that all projects do not have unintentional negative repercussions."</p>	<p>Thank you for your comment. Topics related to monitoring and evaluating impacts to coastal resources from different adaptation strategies are referenced in Chapter 9 (Next Steps). This document is intended to provide broad, statewide guidance on the topic of sea level rise planning, and, as such, does not provide highly detailed discussions of the various adaptation options, but rather provides a starting point for additional planning on the topic-specific level. The Coastal Commission recognizes that additional targeted efforts such as technical working groups, funding for pilot projects, and research on innovative approaches, creative partnerships, and additional guidance will be needed.</p>

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation	Adaptation	"Restoration of watershed ecosystem services through Integrated Water Management practices promote the resumption of natural sediment transport to the coast, and should be included or referenced in the SLR Document. In addition, policies that reduce further impacts to sediment supply can be utilized. For example, the removal of dams in coastal watersheds that have starved our beaches of sand to the point where the reservoir no longer serves an important part of our water supply portfolio, will dramatically improve natural beach replenishment. Further, "managed retreat" will allow a more natural cycle of beach erosion and replenishment."	Restoration of sand supply and related topics are referenced in Chapter 7 (Adaptation Strategies). This chapter presents a variety of adaptation options that should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Surfrider Foundation	Policy and Legal analysis	"Surfrider believes that the SLR Document is a great place to incorporate policy guidance to address projects that may impact marine life or habitat in MPAs and other special marine areas. Development of guidance will help incorporate MPAs into the decision making process to realize the full potential MPAs and help the CCC's mandate to safeguard coast and ocean resources. The Coastal Commission could include language into the Document that identifies MPAs, and other marine areas with protective designations, as sensitive areas meriting special protection under the Coastal Act. Section 30230 states that "[s]pecial protection should be given to areas and species of special biological or economic significance."...Surfrider urges the Commission to establish criteria that must be met when considering projects that could have adverse impacts on MPAs and other sensitive marine areas. Once CCC develops criteria, then we urge the CCC to work with local governments to update LCPs. The guidance should identify information that a project permits must be included (i.e. the location and purpose of MPAs and other special marine areas that could be affected by a proposed project)."	Thank you for your comment. This topic is outside the scope of this Guidance. However, the Commission is aware of and involved in issues related to MPAs and areas of special biological and economic significance and how they relate to Coastal Act resources.

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation	Planning	"As mentioned earlier, Surfrider suggests holding a webinar to help local governments to look at SLR in a broad, 60,000-foot level. Upon completion of the webinar, Surfrider suggests the CCC hold symposiums with local communities and planners. This could easily be accomplished by convening communities that received grants to update their LCPs for SLR. Attendees of the symposium should include local planners, coastal engineers, biologists, CCC Staff, and other experts to clearly identify practical ways to implement the policies recommendations. By conducting symposiums for grantees first, the CCC can glean lessons from cities updating SLR plans—and by the time other communities update LCPs, the CCC will have a better understanding of “what this document actually looks like on the ground”. Surfrider also suggests conducting another specific workshop that bring together all agencies who are will be responsible for implementing statewide SLR guidance. During these workshops, all statewide guidance documents can be linked together and agency roles and responsibilities should be fleshed out."	Thank your comment. The Commission will continue to support local governments and interested parties through efforts including webinars, trainings and workshops.
Dave Ward, Planning Manager, City of Ventura	Funding	"Without a costly comprehensive certified LCP update to address such matters, CCC administration of the Guidance has the potential to penalize both LCP amendments and CDPs on a project-by-project basis. The impact of performing required sea level rise analysis will prove costly to local jurisdiction staff resources and project applicants. Furthermore, for the most part, local jurisdiction staffing lacks the expertise to perform such analysis without retaining outside experts at additional cost, rendering the Guidance an unfunded mandate to local jurisdictions. The Guidance states that the CCC will seek competitive grant funding for local jurisdictions to perform sea level rise planning as part of its next steps. However, without a budgeted stream of funding to local jurisdictions to do so, it constitutes a premature requirement with which they may not be able to comply. As of this writing, the Governor's budget proposal excludes the \$3 million previously allocated to the CCC to provide assistance and review to local jurisdictions for LCP updates. Without the prior allocation to CCC, the ability of the agency itself to provide effective assistance to local jurisdictions will be comprised. As such, the Guidance, in particular the 'Next Steps' program should come attached with a guaranteed funding source and assistance resources to local jurisdictions to implement the Guidance and eliminate the fiscal obstacle to LCP updates."	As stated in the document, this material is guidance, not regulations. The Introduction and Appendix E provide a description of multiple grant opportunities available at the time of publication of this Guidance. Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. However, staff recognizes the costly nature of sea level rise planning and will continue to work closely with state and local partners to identify funding and other opportunities to support sea level rise planning.

Name/ Affiliation	Key Topic	Comment	Response
Dave Ward, Planning Manager, City of Ventura	Policy and Legal analysis	"In addition to the cost of preparing a LCP update specifically for purposes of incorporating SLR planning, another factor that may play into the ability of some jurisdictions to implement the Guidance is simple lack of community support to pursue such an effort. Without approval at the local level, an LCP update would not be forthcoming to the CCC for certification. Given the cost of plan preparation, uncertainty of the CCC certification process and potential impact to private property owners from many of the recommended sea level rise mitigation measures, jurisdictions lacking proactive community support will be reluctant to do so in the absence of clear signals that a sea level rise policy proposal would be able to pass the local approval process let alone the uncertainty typical of review and actions by the CCC. Furthermore, the Guidance lacks requisite analytic anchors and guarantees that certified plans will remain unchallenged on the basis of their SLR analysis as subsequent projects are submitted for review and approval."	The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider sea level rise through its planning, regulatory, and educational activities and is committed to coordinating with local governments and others as they work to address sea level rise. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Language has been added to the document emphasizing the need for continued funding and technical support for local partners.
Dave Ward, Planning Manager, City of Ventura	Policy and Legal analysis	"At a minimum, the Guidance should specifically address special issues of certification that arise where the base recommended science will be reassessed over time and propose a program that will ensure project review consistency for local projects. For example, the SLR standard should be "locked in" for a time period by the LCP updates and CDP filing dates, regardless of an extended CCC review and approval process."	As stated in the Executive Summary and Introduction, this material is guidance not regulations. The Coastal Act and certified LCPs remain the standard of review, and individual CDPs will continue to be reviewed on a case-by-case and location-specific basis. The Commission recognizes the challenges posed by uncertainty in sea level rise projections, and a section on using scenario-based planning to address this uncertainty has been added to Chapter 3 (Sea Level Rise Science).

Name/ Affiliation	Key Topic	Comment	Response
Dave Ward, Planning Manager, City of Ventura	Policy and Legal analysis	"Inherent in local land use regulation is a framework of legal decisions that present constraints to local authority. Many of the policy recommendations put forth as measures to be taken to protect communities from sea level rise such as rezoning, rolling easements, and transfers of development rights convey legal liability to local jurisdictions for encroachment on private property rights, long established by the courts. This is a particular obstacle in communities with long established development along their entire coastal zone and for whom projects will not mainly comprise 'new' development. As such, these measures present an obstacle to the feasibility of sea level rise planning at the local level. To the extent the Guidance puts forth these regulatory recommendations it should also include a discussion of regulatory and legislative solutions at the state level that will remove obstacles such as liability for takings which it specifically excludes. Until such obstacles are discussed in the Guidance and a program of legislative and regulatory measures set in place on behalf of local jurisdictions, these measures are legally infeasible and should be stricken from required recommendations on LCP updates and CDPs."	As stated in Chapter 7, the adaptation options presented will not be applicable in all situations but should instead be implemented on a case-by-case and location specific basis that fulfills the requirements of the Coastal Act and accounts for local conditions. A chapter on the legal context of adaptation planning has been added to the document. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Dave Ward, Planning Manager, City of Ventura	Best Available Science	"The Guidance also states that the science will be reassessed at regular intervals of approximately 5 years for adequacy. What the CCC does not address is the degree to which reliance upon this study or other recommended resources in the Guidance will constitute sufficient analysis by local jurisdictions when conducting recommended sea level rise studies and thus ensure a level of predictability for local jurisdictions and applicants in the project review process."	The Coastal Commission recognizes the challenges inherent in working with continually evolving science. As stated in the Guidance, Commission staff will continue to collaborate closely with local government partners as they work to address sea level rise.
Dave Ward, Planning Manager, City of Ventura	Policy and Legal analysis	"Furthermore, the recommended SLR analysis approximates the life of a proposed project of upwards for a minimum of 75 or 100 years, while the planning horizon for most local general plans and LCPs is a 20 to 25 years. Such an extension of the planning horizon for a LCPA or CDP would present difficulties in instances where the LCP is a portion of a local general plan and the analysis in its accompanying EIR."	As stated in the document, this material is guidance not regulations, and the Coastal Act and certified LCPs remain the standard of review. Additionally, Step 1 of the LCP planning process (Chapter 5) notes that time horizons for planning can be chosen based on local preferences, but recognizes the importance of at least considering longer periods of time given the evolving nature and potential significant impacts of sea level rise. Revisions have been made to the section on project life in Step 1 for the CDP process (Chapter 6) to clarify that this step is done to identify the general time period over which to analyze sea level rise impacts rather than to specify the exact life of a proposed structure.

Name/ Affiliation	Key Topic	Comment	Response
Dave Ward, Planning Manager, City of Ventura	Best Available Science	"The Guidance should include minimum technical requirements by which a local jurisdiction can be assured of adequacy of required sea level rise projections and impact analysis and the time period within which approved data sources are considered valid by the CCC. If other recommended sources are also adequate for the required analysis, such as existing local studies, CCC should include a pre-certification of the adequacy of those sources by which local jurisdictions are offered assurances to avoid multiple revisions to studies and costly delays to project reviews."	Given that this document is intended to be useful to a variety of users and in a variety of situations, a very detailed analysis of data source validity cannot be provided. Individual CDPs and/or LCP updates will require a variety of analyses based on site-specific factors, and they will continue to be reviewed on a case-by-case basis. The Commission recognizes the challenges that the uncertainties of sea level rise presents for planning and will continue to work closely with project applicants and local government partners at all steps of the planning process.
Dave Ward, Planning Manager, City of Ventura	Planning	"Closely associated with the issue of planning horizon in local comprehensive land use plans is public infrastructure planning. Any updates to the LCP would also be expected to occur with a similar planning horizon to the local general plan, and would be expected to be eventually incorporated therein. These comprehensive planning efforts would also necessarily include an analysis of required infrastructure and subsequent adjustments to the local Capital Improvement Program on the same timeline. As a local jurisdiction with one of seven wastewater treatment plants along the Pacific coast outside the San Francisco Bay, the City of Ventura is concerned that the requirement to perform a regional risk assessment to the year 2100 does not accommodate the functional limits of local comprehensive planning time horizons. The Guidance should allow for an adaptive management approach to public facilities (as well as some development project approvals) such that consistency with local planning horizons can be considered for them."	As stated in the document, this material is guidance not regulations, and the Coastal Act and certified LCPs remain the standard of review. Additionally, Step 1 of the LCP planning process (Chapter 5) notes that time horizons for planning can be chosen based on local preferences, but notes the importance of considering longer periods of time given the evolving nature and potential significant impacts of sea level rise, especially for critical infrastructure that is generally designed to exist for a long period of time. The Coastal Commission recognizes that for particularly challenging issue areas, such as waste water treatment plants and other critical facilities at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance. Language has been added emphasizing the need for continued funding and technical support for local governments.
Dave Ward, Planning Manager, City of Ventura	Adaptation	"The City of Ventura also benefits from the use of seven existing groins along its coastline to manage beach erosion. Where the Guidance document states that it would like to avoid perpetuation of shoreline armoring, the City is concerned that maintenance by the managing agency of these structures will be discouraged and may eventually be disallowed. The Guidance document should provide criteria by which such measures would be taken."	As stated in Chapter 7, the adaptation options presented will not be applicable in all situations but should instead be implemented on a case-by-case and location specific basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Individual actions, including maintenance of existing protective structures, will continue to be reviewed on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Jim Nakagawa, City Planner, Community Development Department, City of Imperial Beach	Best Available Science	Recommend that "That the reference to "vertical land motion" on page 8 is somehow linked to the NRC footnote #2 on page 4 that discusses the role that plate tectonics play in vertical land motion."	Greater detail on vertical land motion as it relates to tectonics and the NRC's sea level rise projections for areas North and South of Cape Mendocino as well as the Humboldt Bay region is included in Chapter 3 (Sea Level Rise Science) and Appendix B. Information in the referenced footnote is repeated in these sections, as well as in Chapter 2.
Jim Nakagawa, City Planner, Community Development Department, City of Imperial Beach	Policy and Legal analysis	"That the Coastal Commission seek to influence the legislature to revise CEQA so that CEQA may address Climate Change and Sea Level Rise in its environmental documents as a result of the court decision in Ballona Wetlands vs City of Los Angeles."	Thank you for your comment. The standard of review for actions in the coastal zone is the Coastal Act and certified LCPs rather than CEQA. However, this issue is important and the Commission will continue to coordinate with other state agencies on these challenges.
Bob Battalio, ESA PWA	General	"The document is very helpful in clarifying what is expected with respect to consideration of sea level rise in Coastal Development Permits (CDP) and Local Coastal Plans (LCP). The document is also consistent with our understanding of State Policy, that sea level rise is an important consideration in planning and design of coastal development. Further, the technical content is consistent with the trajectory of coastal hazard mapping in California, and the public's valuation of natural resources, including public access and other ecosystem services provided by our coast. Thank you for your leadership!"	Thank you for your comment and review of the document.
Bob Battalio, ESA PWA	Best Available Science	"Individuals not familiar with coastal process science and engineering may have difficulty understanding some of the language and may need help interpreting specific actions to take. Perhaps a less-technical summary for planners, and even the public, or other actions such as training workshops would facilitate implementation of these guidelines."	This Guidance is meant to be useful to a broad audience with a variety of areas of expertise and knowledge. In general, the sections in the main document provide a broad overview with more detailed discussion in the appendices. The Commission will continue to work with local jurisdictions to provide assistance, including hosting trainings, as needed. Language has also been added to the Guidance emphasizing the need for additional funding and technical support for local governments.

Name/ Affiliation	Key Topic	Comment	Response
Bob Battalio, ESA PWA	Best Available Science	"Consider allowing sea level rise scenarios to be developed in accordance with the US Army Corps of Engineers guidance, which includes the NOAA guidance on relative sea level rise and vertical land motion. We are not saying that we prefer this guidance to NRC (2012) but rather acknowledge that some projects will be required to follow this guidance and the uncertainty in sea level rise is large relative to differences in predictions by the two methods."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the projections from the 2012 NRC report or an equivalent resource. Language has been added to emphasize that local governments may use equivalent resources, in part or in full, provided those sources are consistent with the best available science, peer-reviewed, widely accepted within the scientific community, and locally relevant. Reference to NOAA and Army Corps guidance has been added to Appendix B.
Bob Battalio, ESA PWA	Planning	"Consider allowing design based on shorter time frames, e.g. 2050, while requiring consideration of adaptive capacity or adaptive planning for time frames extending to 2100. This would presumably be a function of project design life, and the consequence of higher sea levels."	Revisions have been made to the sections on project/design life in a) Step 1 for the CDP process (Chapter 6) to clarify that this step is done to identify the general time period over which to analyze sea level rise impacts rather than to specify the exact life of a proposed structure; and b) Step 4 in the CDP process to address the idea of a shorter design life if analysis of sea level rise reveals impacts that may occur over shorter time periods. Additionally, using a shorter design life and/or ensuring that projects are built with adaptive capacity is referenced in Chapter 7 (Adaptation Strategies).
Bob Battalio, ESA PWA	Policy and Legal analysis	"Consider providing preference to projects that restore natural shore processes and functions, in terms of allowing these projects to be implemented even if they may not be sustainable over longer time frames and greater sea level rise amounts."	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone, though the Commission is supportive of projects that restore natural processes. The adaptation strategies presented in Chapter 7 should be implemented on a case-by-case and location specific basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Bob Battalio, ESA PWA	Monitoring, Research Needs, and Next Steps	"Consider that additional guidance may be needed to address the implications of existing infrastructure on LCP planning. For example, a municipality may not have control over adaptation strategies employed for existing state roads, railways, utilities such as sewer facilities, and other infrastructure that is managed by special districts. The actions to be taken with these facilities may have more of an effect on future coastal conditions, yet the entities that have control over these faculties may not have a shore management responsibility or capability."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Coastal Commission recognizes that for particularly challenging issue areas, such as critical facilities and multi-jurisdiction transportation corridors at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance.
Bob Battalio, ESA PWA	Monitoring, Research Needs, and Next Steps	"The State could provide more specific guidance for hazard mapping, vulnerability assessments and adaptation planning for these (CDP / LCP) and other planning and engineering projects and management plans. This recommendation may not be practical or appropriate for these guidelines."	The appendices provide additional detail on how to develop local hazard conditions based on local or regional sea level rise as well as a number of resources related to sea level rise vulnerability mapping and existing studies. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Bob Battalio, ESA PWA	Best Available Science	"a. The State could develop global sea level rise curves consistent with the NRC 2012 report for California regions, together with vertical land motion based on local data if significant relative to global sea level rise: For example, a table similar to Table 3 in the National Climate Assessment (NOAA, 2012)."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the regional projections from the 2012 NRC report or an equivalent resource. The Guidance also notes that in cases except for the Humboldt Bay and Eel River Estuary region, these projections can be used without modification for local conditions (such as vertical land motion). Other peer-reviewed and well-documented climate science, adaptation strategies, and management practices may be used as equivalent resources. Commission staff will continue to support and collaborate with local government partners as needed.

Name/ Affiliation	Key Topic	Comment	Response
Bob Battalio, ESA PWA	Adaptation	"b. The availability of coarse sand sources on State lands for beach nourishment could be investigated."	Chapter 7 of the document presents a variety of adaptation options, including beach nourishment. These options should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Bob Battalio, ESA PWA	Adaptation	"c. The effects of armoring on the shore could be described."	A new section has been added to Chapter 7 (Adaptation Strategies) that briefly describes the impacts of hard armoring on shorelines. This topic is also identified in Chapter 9 as an additional research need.
Bob Battalio, ESA PWA	Adaptation	"d. The need to consider shore evolution over time as a means for evaluating adaptation strategies could be articulated along with guidance."	The idea of considering shore evolution over time is referenced in both Chapter 5 (Addressing SLR in LCPs) and Chapter 6 (Addressing SLR in CDPs) in that the steps emphasize the need to consider how various adaptation options will impact coastal resources over time and the importance of monitoring and updating adaptation strategies over time to reflect changing conditions.
Bob Battalio, ESA PWA	Planning	"e. There are other candidate "gaps" that are unlikely to be filled or acknowledged by municipal employees or project applicants."	The Coastal Commission recognizes that for particularly challenging issue areas, such as waste water treatment plants and other critical facilities at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance, and will continue to work with state and local partners to address sea level rise.
Bob Battalio, ESA PWA	General	"a. For references to the Pacific Institute hazard mapping results (e.g. amount of erosion, flooding), should reference PWA 2009 and/or Revell et al 2011."	Changes were made as suggested.
Bob Battalio, ESA PWA	General	"b. Reference to the Cal-Adapt website should clarify that the data source for the flooding maps was the Pacific Institute data sets to clarify that it is a single source. Cal-Adapt for whatever reason has never included the Pacific Institute derived coastal erosion hazard zones (e.g. table 14)"	Changes were made as suggested.
Bob Battalio, ESA PWA	Best Available Science	"c. The recent IPCC document released in Oct 2013 should be mentioned in the sections related to the climate science of sea level rise."	Changes were made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
Bob Battalio, ESA PWA	Adaptation	"d. Sample policy language might help local jurisdictions."	Thank you for your comment. The Commission agrees that further guidance, particularly as it pertains to policy language for adaptation options, will likely be necessary. Language has been added to emphasize the need for continued funding and technical support for local governments and the Commission will continue to provide support as needed.
Bob Battalio, ESA PWA	Adaptation	"e. Coastal Regional Sediment Budget Plans may be useful references for LCPs, and perhaps even CDPs"	Regional sediment management plans are referenced in multiple places throughout the document, including as an adaptation strategy. The California Coastal Sediment Management Workgroup (CSMW) is listed in Appendix B as a valuable resource.
Bob Battalio, ESA PWA	Policy and Legal analysis	"f. Expansion of coastal zone boundaries may be needed."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Bob Battalio, ESA PWA	Adaptation	"g. Evaluation of adaptation strategies should include consideration of ecology and ecosystem services costs which are often "externalized" in traditional project analysis."	The idea of considering ecological costs and benefits over time is referenced in both Chapter 5 (Addressing SLR in LCPs) and Chapter 6 (Addressing SLR in CDPs) in that the steps emphasize the need to consider how various adaptation options will impact coastal resources over time and the importance of monitoring and updating adaptation strategies over time to reflect changing conditions. This topic is also referenced in the Guiding Principles in Chapter 2. A brief section on the pros and cons of various types of adaptation strategies has been added to Chapter 7 (Adaptation Strategies).
Bob Battalio, ESA PWA	General	"h. p.22 A.1. add General Plans"	The list in question refers to the plans/actions that the Commission itself is tasked with reviewing. However, the Coastal Commission does not review General Plans.

Name/ Affiliation	Key Topic	Comment	Response
Bob Battalio, ESA PWA	Planning	"i. p.24 B.5. consider encouraging bonds up front to pay for repairs, removals as the structures become obsolete or fail."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation
Bob Battalio, ESA PWA	Planning	"j. p.24 B7. Last sentence. consider adding "or facilitate planned retreat/relocation."	Guiding principle #7 addresses coastal development that must necessarily be sited in vulnerable areas, making relocation and managed retreat an unfeasible option. Managed retreat for other development is noted in principle #10.
Bob Battalio, ESA PWA	General	"k. p.31 bullet on Erosion. add citations of PWA 2009 and/or Revell et al 2011."	Change was made as suggested.
Bob Battalio, ESA PWA	Adaptation	"l. During Phase 5, the LCP development, jurisdictions may identify sections of shoreline that they may apply certain adaptation strategies compared to others (e.g. armor in one place in exchange for managed retreat). Perhaps some language similar to the State of Washington language on no net loss of ecological function would be helpful?"	Chapter 7 (Adaptation Strategies) includes a discussion of habitat-protective adaptation strategies, including "no net loss" provisions. It is expected that these adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships.
Bob Battalio, ESA PWA	Planning	"m. For the steps 1-4- specifically encourage analysis at regional scales with parcel level applications to identify effects and effectiveness of the proposed action"	The Commission recognizes the challenges that exist, and will work to help support and coordinate local and regional efforts to plan for sea level rise. Additional language has been added regarding the utility of regional coordination.
Bob Battalio, ESA PWA	General	"n. p.25 C.9. last sentence clarify "barriers""	Change was made to text in guiding principle description.
Bob Battalio, ESA PWA	Policy and Legal analysis	"o. p.25 C.10. consider discussing who is currently on the hook to pay for removal of derelict or structures that are no longer needed."	As broad statewide guidance, this document is not meant to provide that level of detail. Responsibility for derelict structures is determined on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Bob Battalio, ESA PWA	Policy and Legal analysis	"p. p.26 C.13. should reference be made to Division of State Lands?"	Thank you for your comment. The Guiding Principle in question relates to the Commission practice of requiring mitigation for unavoidable impacts. Such mitigation requirements are often included in CDPs.
Bob Battalio, ESA PWA	General	"q. table 4. revise the coastal resilience link to maps.coastalresilience.org"	The link has been updated.
Bob Battalio, ESA PWA	Monitoring, Research Needs, and Next Steps	"r. p.87 #6. add storm event monitoring data collection to support model refinements and calibration."	Change was made as suggested.
Bob Battalio, ESA PWA	Best Available Science	"s. p.138. second paragraph. consider adding or size and frequency of cliff failures"	Change was made as suggested.
Bob Battalio, ESA PWA	General	"t. table 13 and 14. add coastal resilience"	Change was made as suggested.
Bob Battalio, ESA PWA	General	"u. p.141 bottom box clarify "seasonal erosion""	Change was made as suggested.
City of Dana Point, Public Works and Engineering Dept.	Best Available Science	"The publication and comments for the draft policy are occurring in 2014, which is approximately one-half of the 30 year projection. What are the current results of documented sea level rise versus the estimated rise? The estimated rise for our coastline (South of Cape Mendocino) is 1.6-12 inches."	Chapter 3 (Sea Level Rise Science) presents information explaining recent sea-level trends. In the past 15 years, mean sea level in California has remained relatively constant, and has been suppressed due to factors such as offshore winds and other oceanographic complexities. As the Pacific Decadal Oscillation, wind, and other conditions shift, California sea level will continue rising, likely at an accelerated rate (NRC, 2012, Bromirski et al., 2011, 2012). All of the latent sea level rise might occur quickly, providing sea level conditions consistent with the future projections. The actual sea level rise value for any year projected by NRC is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report. As a precise value cannot be specified with high confidence, the Commission recommends scenario planning, which is described in Chapter 3.
City of Dana Point, Public Works and Engineering Dept.	Best Available Science	"The range for 2030, 2050 and 2100 are so vast that the implementation will be very difficult. Such a large range seems to indicate the need for additional study."	A section in Chapter 3 (Sea Level Rise Science) was added explaining why projections are given in ranges and the importance of using scenario-based analysis to plan for uncertain future conditions.

Name/ Affiliation	Key Topic	Comment	Response
City of Dana Point, Public Works and Engineering Dept.	Best Available Science	"The estimated ranges for 2030, 2050 and 2100 need to be more defined per regions of the coast. For example Southern California should have more defined range."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the regional projections from the 2012 NRC report, which include the regions of North and South of Cape Mendocino. The Guidance also notes that in cases except for the Humboldt Bay and Eel River Estuary region, these projections can be used without modification for local conditions (such as vertical land motion). Language has been added explaining why it is not necessary to modify sea level rise projections for local vertical land motion, though the process for doing so is described in Appendix B.
City of Dana Point, Public Works and Engineering Dept.	Best Available Science	"Based on the previous 100 year sea level rise of 8", the proposed 1.6"- 12" rise in the next 30 years (actually 15 years to date) needs additional detail for such a large range."	According to best available science, future sea level rise is not expected to follow the historic trend, but will likely accelerate in the future instead. Description of the best available science for sea level rise can be found in Chapter 3 and Appendix A.
City of Dana Point, Public Works and Engineering Dept.	Policy and Legal analysis	"The resulting improvements required by sea level rise i.e, additional beach nourishment and harbor breakwater improvements should have a streamlined process through the Coastal Commission and Local Coastal Program."	The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone, and actions will continue to be reviewed on a case-by-case basis and based on local conditions and factors. The adaptation strategies presented in Chapter 7, which include beach nourishment and facility retrofits, will also be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
City of Dana Point, Public Works and Engineering Dept.	Best Available Science	"Impacts to the Local Coastal Program Implementation need to be clearer. Recommended values or design values for sea level rise should be included in the report."	Chapter 5 suggests using the sea level rise projections in the 2012 NRC report and includes step-by-step guidance on how to use scenario-based planning for sea level rise. The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone, and actions will continue to be reviewed on a case-by-case basis and based on local conditions and factors. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point rather than a specific and detailed analysis of projects and Commission-related actions. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Commission will continue to work with and support local governments.

Name/ Affiliation	Key Topic	Comment	Response
City of Dana Point, Public Works and Engineering Dept.	Best Available Science	"Impacts to Wave Run-up or Coastal Hazard Studies are unclear. Recommended values or design values for sea level rise should be included in the report."	Detail on coastal hazard analyses and a variety of related resources are found in Appendix B. The Commission is available to provide additional assistance if necessary. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point rather than a specific and detailed analysis of projects and Commission-related actions. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Commission will continue to work with and support local governments.
CMANC, Working Waterfronts Committee	General	"We applaud the efforts of the Work Group to provide a resource to help coastal communities prepare for the challenges of sea level rise. We commend you for focusing on trying to take proactive steps to address sea level rise based on the best available environmental science. More importantly, we appreciate your recognition of the importance of involving local land use regulatory agencies to address the consequences of climate change."	Thank you for your comment and review of the document.
CMANC, Working Waterfronts Committee	Policy and Legal analysis	"...although the Guidance Document states that it is not a regulatory document, the Adaption Measures (Site Development Standards, Mitigation, Shoreline Management and Protection programs etc.) appear poised to become the threshold of review for new and amended LCPs under the guise of minimizing hazard risks. If so, the Guidance Document's recommendations for addressing sea level rise will be regulatory and mandated for implementation by local agencies as part of new or amended LCPs."	As stated in the Executive Summary and Introduction, this material is guidance not regulations. The Coastal Act and certified LCPs remain the standard of review, and individual CDPs will continue to be reviewed on a case-by-case and location-specific basis. Chapter 7 presents a wide array of adaptation strategies that will not be applicable in all situations but should instead be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
CMANC, Working Waterfronts Committee	Policy and Legal analysis	"Of critical concern to all local agencies, both those with and without certified LCPs, is the Guidance Document's failure to address how sea level rise may involve private property rights and takings issues in specific cases (Guidance Document, Page 20). It is not the issue of sea level rise that gives rise to a takings claim. Rather, it is mandatory imposition of strategies ranging from protection, accommodation and retreat, to land use decisions that may result in the taking of private property. To the extent that the Coastal Commission will rely on local agencies to implement the recommendations of the Guidance Document, we respectfully request that the Commission clarify its intention to guide development based on existing available science as opposed to setting standards by which hazard minimization is addressed."	As stated in the Executive Summary and Introduction, this material is guidance not regulations. The Coastal Act and certified LCPs remain the standard of review, and individual CDPs will continue to be reviewed on a case-by-case and location-specific basis. The Coastal Act does allow shoreline protection for existing development and for coastal-dependent uses when that protection is necessary and when appropriate mitigation is provided. Chapter 7 presents a wide array of adaptation strategies that will not be applicable in all situations but should instead be implemented on a case-by-case basis in a way that reflects local circumstances. A chapter on the legal context of adaptation planning has been added to the Guidance to further address legal issues that might arise.
CMANC, Working Waterfronts Committee	Planning	"With such an unequivocal commitment, the Coastal Commission would provide coastal cities with sufficient flexibility to implement the recommendations set forth in the Guidance Document where appropriate and based on regional and site-specific circumstances. For instance, the Guidance Document provides an approach for addressing sea level rise that may only be appropriate in areas that have not been highly urbanized. This is especially the case where the Guidance Document provides good suggestions to promote a comprehensive assessment and development of policies for hazard avoidance mitigation by developing shoreline management plans and beach nourishment plans. Clearly, the Guidance Document's encouragement to perform adaptive planning at the regional level and to establish a transfer of development credits program are helpful suggestions for areas that have not been urbanized. However, in highly urbanized areas, such as Southern California, coastal resources can be very limited and options for managed retreat may not exist."	Chapter 7 provides a broad array of adaptation strategies, including options for protecting existing development. As noted in the document, strategies should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions, though regional coordination is encouraged for the purposes of leveraging resources and considering cumulative impacts. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Coastal Commission recognizes that for particularly challenging issue areas, such as waste water treatment plants, critical facilities, transportation corridors, and highly urbanized areas at risk from sea level rise, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance.

Name/ Affiliation	Key Topic	Comment	Response
CMANC, Working Waterfronts Committee	Policy and Legal analysis	"the Guidance Document should clarify its intent as distinguishing development within, and adjacent to, harbors and the open ocean. The Guidance Document presents some ambiguities for the protection of harbors from potential flooding due to sea level rise...harbor flood defenses include jetties, seawalls, groins, tide gates, storm water pump systems, groundwater dewatering systems, and elevated finished floor elevations...these harbor flood defenses are only effective when working together...[they] act as a unit to protect residential, commercial and industrial properties and facilities in the coastal zone including boat yards, fuel stations, marine supply facilities, recreational facilities, tourist-serving facilities, houses, hotels, and restaurants [they] allow for commercial and recreational boating and fishing activities, as well as safe beach access for residents and visitors... [they] allow all property owners to participate in federal flood insurance programs. We believe that the Guidance Document should be revised to reflect that several items in the Guidance Document would not be applicable in urbanized areas or to the maintenance, replacement or protection measures of property and facilities in, around and adjacent to a harbor's flood protection facilities."	As stated in the Executive Summary and Introduction, this material is guidance not regulations. The Coastal Act and certified LCPs remain the standard of review, and individual CDPs will continue to be reviewed on a case-by-case and location-specific basis. Chapter 7 presents a wide array of adaptation strategies that will not be applicable in all situations but should instead be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
CMANC, Working Waterfronts Committee	Policy and Legal analysis	"In conclusion, we respectfully request that the Guidance Document be revised to confirm that it is not a regulatory document, and will not be implemented as such. In addition, in light of all the concerns of the coastal cities, and given the important role of local agencies in addressing sea level rise through land use decisions, we request that the Coastal Commission staff consult with the coastal cities on revisions to the Guidance Document. Given an opportunity to be consulted, we are confident that the Coastal Commission and local agencies can work together on a collaborative document that can be implemented without creating an unwieldy process without clear and objective standards."	As stated in the Executive Summary and Introduction, this material is guidance not regulations. The Coastal Act and certified LCPs remain the standard of review, and individual CDPs will continue to be reviewed on a case-by-case and location-specific basis. The Coastal Commission will continue to coordinate with and support local governments as they work to implement adaptation plans.
CA Dept. of Fish and Wildlife	General	"Overall, we found the Draft Sea-Level Rise Policy Guidance to be very well written, organized, and informative. The level of detail both in the body of the document and the appendices is appropriate, and the amount of decisive information and recommendations is impressive. In particular, the discussion of how to choose SLR projections (from the latest science) and the existing examples of how SLR is being incorporated into LCPs and CDPs were very valuable additions. Also, the intent of the document is made very clear from the offset, which is extremely important in a state policy guidance document."	Thank you for your comment.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Fish and Wildlife	Planning	"Page 23, bullet 3: Consider providing examples (or links to examples) that illustrate how to use a range of scenarios in planning exercises."	A section on scenario-based planning has been added to Chapter 3 (Sea Level Rise Science) and Chapter 5 (Addressing SLR in LCPs) provides some examples of planning exercises using scenarios. Appendix C (Resources for Addressing SLR) provides a number of resources related to adaptation planning, including example vulnerability assessments, data clearinghouses, and adaptation guides that may be useful.
CA Dept. of Fish and Wildlife	General	"Page 24, bullet 6: Consider defining “coastal resources” earlier in the text. This term could have different interpretations depending on the perspective of the individual reader, so it might be helpful to define the term and perhaps list some examples of different types of coastal resources at the beginning of the document."	Reference to Ch. 3 Coastal Act resources has been added to this section.
CA Dept. of Fish and Wildlife	General	"Page 24, bullet 8: What is considered a “hazardous area”? Have those been identified in a way that is consistent along the coast? If not, consider including as a recommendation or research need."	In general, hazard areas are defined in individual LCPs based on local conditions.
CA Dept. of Fish and Wildlife	Adaptation	"Page 25, bullet 10: This bullet references the use of nature-based solutions versus armoring. If appropriate, consider adding reference here or later in the report to the recently released TNC document, “Reducing Climate Risks with Natural Infrastructure”"	The referenced TNC report has been added to Appendix C (Resources for Addressing SLR).
CA Dept. of Fish and Wildlife	General	"Page 72: Hyperlinks to the various sections appear to be broken."	Hyperlinks have been updated.
CA Dept. of Fish and Wildlife	Monitoring, Research Needs, and Next Steps	"Page 86: In the Research Needs section, consider adding reference to the California Climate Change Research Plan that is currently under development. That effort involves several state agencies and is being led by the CA Energy Commission."	Change was made as suggested.
CA Dept. of Fish and Wildlife	Planning	"Page 87, Coastal Habitat Vulnerability bullet: CDFW is currently developing a state-wide climate vulnerability assessment for vegetative communities in California. This will include coastal communities and the consideration of sea level rise. The work is being conducted in association with the update to the state’s Wildlife Action Plan."	This has been added to Appendix C (Resources for Addressing SLR).
CA Dept. of Fish and Wildlife	Planning	"Page 156, Resources for SLR planning: If appropriate, consider adding the CA Essential Habitat Connectivity Project (http://www.dfg.ca.gov/habcon/connectivity/) and CDFW’s Areas of Conservation Emphasis tool (http://www.dfg.ca.gov/biogeodata/ace/). These are both resources that may inform LCP or CDP development with respect to the consideration of coastal habitat and wildlife."	This has been added to Appendix C (Resources for Addressing SLR).

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"We urge the Commission to prioritize environmentally-sound, nature-based adaptation strategies, such as wetland, dune, and beach protection, as these habitats will help buffer communities from sea level rise and storm surges while enhancing coastal resources."	Chapter 7 presents a broad array of adaptation strategies, including those that encourage the use of natural-based adaptation options (such as green infrastructure and living shorelines). These strategies will continue to be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Heal the Bay	Best Available Science	"Heal the Bay supports the CCC's commitment to using best available science to develop sea level rise projections, and encourages the pursuit of refined sea level rise projection and vulnerability analyses for planning at the local scale. We further recommend that the CCC provide detailed guidance on the minimum attributes to include in these localized sea-level rise vulnerability analyses, including shoreline attributes and slope, storm frequency and magnitude, storm surge projections, sediment transport patterns, fluvial flood frequency and magnitude, shoreline erosion patterns, and changes in local precipitation and runoff patterns. Additionally, we support CCC's proposal to regularly review and update sea-level rise projections based on the best available science, as new information becomes available. We also recommend that local municipalities use a range-based approach when developing refined sea-level rise projections, and apply the precautionary approach when making Local Coastal Program (LCPs) and Coastal Development Permit (CDPs) related decisions."	Step 2 in both the LCP and CDP planning processes (Chapter 5 and 6) describe the types of hazards that should be considered. Appendix B provides a detailed description of how to include sea level rise in a number of hazard analyses. Because the Guidance is intended as broad, statewide resource, it is not intended to provide location-specific detail on sea level rise projections. Vulnerability and hazard assessments will be done on a location specific and case-by-case basis.
Heal the Bay	Adaptation	"Although we are supportive of the direction the CCC intends to take regarding minimizing coastal hazards (pages 24-25), we recommend that the guidance document best strengthened to restrict new development in hazard zones. We also recommend that it incorporate direction to evaluate existing developments in these zones by utilizing risk assessments to gauge the vulnerability of each development to flooding and sea-level rise for its functional lifespan, and that local governments work with high risk development owners to identify the best course of action for these sites to address the sea-level rise related vulnerabilities. We specifically support the emphasis on prioritizing coastally dependent uses (number 7), the "no future seawall" deed restriction in number 8 if new development is allowed in hazard areas."	Chapter 7 presents a variety of adaptation strategies, including limiting or restricting new development in hazard areas. As stated in the document, these adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Information for conducting vulnerability assessments of existing development is presented in Steps 2 and 3 in Chapter 5 (Addressing SLR in LCPs).

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"When planning and locating new development, the guidance document should explicitly state what types of development should not be zoned in areas vulnerable to sea-level rise, for example industrial uses or development that may result in habitat or water quality degradation. Infrastructure that may cause or contribute to surface and subsurface water quality impairments should be disallowed, such as Publicly Owned Treatment Works or Wastewater Treatment Facilities, onsite waste treatment systems or septic systems, and waste disposal and processing facilities, such as dumps. Siting these types of development in areas vulnerable to sea-level rise will create high risk of inundation, which could lead to further water quality impairments; therefore, LCPs should consider this in the planning and designing of these facilities when placed in the coastal zone."	Chapter 7 presents a variety of adaptation strategies, including suggestions related to critical infrastructure. As stated in the document, these adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Information for conducting vulnerability assessments of existing development is presented in Steps 2 and 3 in Chapter 5 (Addressing SLR in LCPs).
Heal the Bay	Adaptation	"Heal the Bay support the guidance document's emphasis on maximizing natural shoreline values and processes, while avoiding the perpetuation of shoreline armoring. We further recommend that the guidance document prioritize the implementation of non-structural adaptation strategies that enhance ecosystems' natural adaptive capacity and restrict the use of sea walls and other structural protective barriers where a less environmentally damaging alternative exists."	Chapter 7 presents a broad array of adaptation strategies, including those that encourage the use of natural-based adaptation options (such as green infrastructure and living shorelines). These strategies will continue to be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Heal the Bay	Policy and Legal analysis	"Moreover, the sea-level rise guidance document should include provisions to require the incremental review of sea walls and hardened streambanks, so that they are not conditioned to live in perpetuity. We suggest a potential 15-year review period, as it offers a time certain for permit re-evaluation. We also encourage the integration of a monitoring and mitigation component in the recommended seawall and hardened streambank review, whereby existing armored stretches and adjacent shorelines are monitored, and if they are found to be causing or contributing to habitat damage or shoreline erosion, the property owner is responsible for mitigation of these impacts. Seawalls and hardened streambanks also often follow a pattern where they are concentrated in certain riparian and coastal stretches. These concentrated areas of hardening may have cumulative erosion and habitat degradation impacts; therefore, we recommend that environmental impacts of armored coastal and stream areas within close proximity of one another be considered cumulatively."	Shoreline armoring projects are reviewed on a case-by-case basis. The need for a better understanding of the cumulative impacts of these structures is identified in Chapter 9 (Next Steps).

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Planning	"We support the guidance provided in this section to provide maximum protection to public beaches, recreational resources, and natural shorelines. We further recommend that the CCC address critical habitats, such as wetlands and dunes, in this section by including a provision that provides guidance for the identification, protection, and buffering of these important habitats so that they can migrate inland or be restored elsewhere as sea-level rises. Additionally, we recommend that local governments conduct analyses that identify properties inland from these critical natural habitats as potential migration corridors, and proactively plan for habitat migration through a variety of options, such as re-zoning, inland habitat protection, etc."	Step 4 of Chapter 5 (Addressing SLR in LCPs) notes the importance of updating maps and inventories of a variety of coastal resources, including natural and critical habitats. Chapter 7 provides a broad array of adaptation strategies for protecting certain resources, including strategies such as protecting migration corridors.
Heal the Bay	Planning	"Heal the Bay applauds the CCC for including agency coordination in the guidance document, as it is a critical part of successful policy implementation. We are also encouraged to see regional assessments included in this section (page 27, number 16). We recommend that the CCC highlight some specific examples of regional assessments, for example the vulnerability assessments done as a part of Adapt-LA in Los Angeles or Ventura County, to provide local governments sample resources to facilitate this work."	Thank you for your comment. Appendix C (Resources for Addressing SLR) includes a list of resources which includes a number of existing vulnerability assessments and other sea level rise related work. Adapt LA has been added to this list.
Heal the Bay	Planning	"We are hopeful that vulnerability assessments, sea-level rise projections, and climate change related LCP updates are conducted in a consistent manner across local municipalities. Therefore, we urge the CCC to facilitate this process by becoming a clearinghouse for vulnerability assessments, LCP updates, and other Coastal Act climate policies pursued at the local scale. Moreover, we recommend that the CCC work with the local governments that are early adopters in updating their LCPs for sea-level rise, and develop model LCP policies that can be adapted and integrate across the state to help facilitate a consistent approach to coastal climate change adaptation."	Thank you for your comment. Given the variety of sea level rise impacts and other factors as well as local priorities and goals, it is likely that there will be variability in vulnerability assessments and LCP updates. However, the Commission will continue to support efforts to share information on adaptation strategies and other sea level rise work.
Heal the Bay	Planning	"We further recommend that the guidance document explicitly direct CCC to provide updates to sister state agencies, such as the State Lands Commission, State Water Resources Control Board, and Department of Fish and Wildlife on sea-level rise related research and planning efforts, to share updated plans and information and pursue consistency in direction across agencies."	Thank you for your comment. As stated in the Guidance, this document will be updated as necessary to provide best available science. The Commission will continue to coordinate with and support other state agency efforts to address sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Best Available Science	"As mentioned above, Heal the Bay recommends that localized vulnerability assessments be conducted to inform planning. These refined studies should incorporate not only the NRC sea-level rise projections, but also the many factors that may affect inundation, erosion, and other sea-level rise impacts (shoreline attributes and slope, storm frequency and magnitude, storm surge projections, sediment transport patterns, fluvial flood frequency and magnitude, shoreline erosion patterns, and changes in local precipitation and runoff patterns). We recommend that the CCC include detailed direction on the minimum attributes to include in these localized sea-level rise vulnerability analyses in its guidance document."	Chapters 5 (Addressing SLR in LCPs) and 6 (Addressing SLR in CDPs) discuss the need to do local/regional vulnerability studies to inform planning. Appendix B gives detail on how to perform a variety of important hazard analyses and provides a number of additional resources for doing so. As a broad, statewide Guidance, this document provides a framework rather than specific details on the requirements for the variety of projects that may arise. LCP certifications/updates and CDPs will continue to be reviewed on a case-by-case basis taking into consideration the requirements of the Coastal Act as well as local conditions.
Heal the Bay	Best Available Science	"The guidance document addresses changes to sediment supply and movement from sea-level rise in the coastal zone (page 31), which we support, but we recommend that it take a more watershed-based approach and consider sediment impacts along the land-sea interface. Currently, the document only identifies sediment loss potential in the coastal zone. Yet, sea-level rise may also increase fluvial erosion rates as more frequent and/or more severe storms occur, thereby increasing sediment supplies in the coastal zone. Sea-level rise is likely to increase erosion rates along coastal areas with oceanfront cliffs; however, it will also likely increase erosion rates along low lying zones as inundation moves inland. We ask that erosion be expanded to address low lying regions as sea-level rise will dramatically alter sedimentation and deposition in these areas. Furthermore, the guidance document should state that physical impacts of sea-level rise (flooding and inundation, erosion, changes in sediment supply and movement, etc.) are likely to occur simultaneously; LCPs need to consider the cumulative impacts of these events."	Revisions have been made to reference erosion of low-lying habitats. Consequences to specific habitats are also noted in Chapter 4 (Consequences of SLR for Communities, Coastal Resources, and Development). The particular change in fluvial systems that result from sea level rise has been noted as an area that needs additional research.
Heal the Bay	Best Available Science	"The guidance document discusses how sea-level rise will impact water quality in the coastal zone; however, water quality impacts from sea-level rise are not strictly limited to soil inundation, wastewater facilities damage, ground water supplies contamination. These impacts also include public and private infrastructure already constructed to protect water quality. Local municipalities have historically and are currently working to improve coastal water quality regularly through the implementation of stormwater, trash capture, and low impact development projects. Sea-level rise is likely to impact these projects. The guidance document should be updated to include impacts sea-level rise will have on existing water quality protection infrastructure (page 31)."	Language has been added in Chapter 4 (Consequences of SLR for Communities, Coastal Resources, and Development) in the water quality section noting that other methods for water quality protection may be impacted.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Best Available Science	"Heal the Bay appreciates the attention given to protection of sensitive buffer habitats, like wetlands, in the guidance document. The document states that "a 1.4 meter increase in sea-level would flood 150 square miles of land immediately adjacent to wetlands, which could become future wetlands if that land remains undeveloped (Heberger et al., 2009)," which is somewhat misleading because it does not indicate whether the land surrounding wetlands is currently developed (page 34). Many wetlands have extensive developed areas in close proximity, especially in Southern California. Therefore, the guidance document paints a more optimistic picture for wetland migration than exists in most places throughout California. We recommend that the CCC provide more context to the amount of available land for wetland migration in California (and particular Southern California, which is extremely wetland-habitat deficient), as it will help elevate the urgency for protection or acquisition of undeveloped land adjacent to existing wetlands."	Language has been added to the example of wetland migration in Chapter 5 to note that wetland migration into open upland areas is a relatively uncommon scenario. Barriers to migration of wetlands and other habitats are noted in other areas of the document, including in Chapter 4 (Consequences of SLR for Communities, Coastal Resources, and Development).
Heal the Bay	Adaptation	"Additionally, we [appreciate the] guidance document's recognized need for protection of beach, dune, and intertidal habitats because of habitat value and sea-level rise. In particular, dune habitats will greatly help a coastal community's adaptive capacity for sea-level rise due to their natural buffer capacity. Dune habitats have also suffered significant losses along the coast, and in particular throughout Southern California. We recommend that the CCC prioritize dune and wetland restoration and migration as part of the sea-level rise guidance document, due to the natural buffer potential of these habitats. We further recommend that the guidance document also identify marine protected areas (MPAs) as areas of important habitat value where protection from development and coastal climate change related impacts should be minimized."	Thank you for your comment. Habitat restoration and the use of natural or green infrastructure are referenced in Chapter 7 (Adaptation Strategies). It is expected that adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. The topic of MPAs is outside the scope of this Guidance. However, the Commission is aware of and involved in issues related to MPAs and areas of special biological and economic significance and how they relate to Coastal Act resources.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"Heal the Bay supports the approach taken by the CCC in the guidance document to outline specific steps for local municipalities for embarking on sea-level rise integration into LCPs. We recommend as a next step that the CCC work to develop some model LCP policies for local governments to adapt and integrate in their sea-level rise planning to foster a consistent approach to climate change adaptation across the state. We also urge the CCC to include additional direction within the steps outlined in this section of the guidance document, as detailed below."	Thank you for your comment. Given the variety of sea level rise impacts and other factors as well as local priorities and goals, it is likely that there will be variability in vulnerability assessments and LCP updates. However, the Commission will continue to support efforts to share information on adaptation strategies and other sea level rise work. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Adopting policy guidance and model ordinance language for resilient shoreline residential development in hazardous areas affected by sea level rise is a next step described in Chapter 9.
Heal the Bay	Best Available Science	"We recommend that the CCC include specific direction in Steps 1 and 2 for pursuing local vulnerability assessments and sea-level rise projection studies. Specifically, we urge the CCC to include guidance for the minimum parameters to include in NRC sea-level rise projection refinements at the local scale, for example, shoreline attributes and slope, storm frequency and magnitude, storm surge projections, sediment transport patterns, fluvial flood frequency and magnitude, shoreline erosion patterns, and changes in local precipitation and runoff patterns. We also recommend that the guidance document include cost-projections for these assessments, and suggestions about how to fund fine-scale studies. Providing examples of similar studies that have already been conducted, such as Adapt LA, will also help local governments that have not initiated such research understand the scope and outputs, thereby enhancing facilitation of future analyses and assessments."	As broad statewide guidance this document does not provide topic-specific detail. LCPs and CDPs will continue to be reviewed on a case by case basis. Steps 1-3 in Chapter 5 are designed to explain how to do a vulnerability assessment tailored to an LCP development/update process. Appendix B explains how to use the NRC projections to analyze the likely local impacts that will arise based on local conditions (including erosion, wave impacts, storms, etc.), and provides a number of resources to assist with this analysis. A number of sea level rise mapping tools are also noted in Chapter 5. Examples of other vulnerability assessments are included in Appendix C, and Adapt LA has been added to this section. The Introduction and Appendix E include a description of several funding opportunities available for this type of work, and language has been added emphasizing the need for continued funding and technical support for local governments. The Commission will continue to coordinate with and support local government efforts.
Heal the Bay	Planning	"In addition, under Step 2 (page 40) we suggest adding the following to the list of questions to help identify future hazards and sea-level rise impacts: What are the existing sediment regimes and conditions relevant to the planning area? What are the projected changes in sediment transport regimes? What are the existing land use and habitat types relevant to the planning area?"	Sediment regime considerations have been added to the list of factors to consider in Step 2. Land use and habitat conditions are discussed in Step 3.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Planning	"Also under Step 2 (page 40), we suggest adding the following to the topics to be evaluated for current and future conditions: Current and future sedimentation rates; Current and future land use/open space and habitat mapping."	Sedimentation rates were added to the section. Habitat mapping and vulnerability is addressed in Step 3.
Heal the Bay	Planning	"We suggest breaking up the one bullet that includes natural resources ("wetlands, ESHA, and other coastal habitats and sensitive species") into several bullets highlighting the main types of habitats, as well as the associated ecological resources (page 43): Sandy beach and dune habitats and associated beach species such as beach hoppers, snowy plovers, brodiaea, grunion, etc.; Rocky intertidal habitats and marine species such as black abalone, owl limpets, sea palm, and red abalone; Wetland habitats and sensitive species such as tidewater goby, sensitive migrating bird species, and native plants"	The bulleted list is a general list of coastal resources as defined by the Coastal Act. Chapter 4 (Consequences of SLR for Communities, Coastal Resources, and Development) discusses the impacts to these different habitats in greater detail.
Heal the Bay	Planning	"We also recommend adding these coastal development features (page 43): Existing and planned shoreline and stream barriers such as sea walls rip rap, hardened banks, and dams; Existing and planned bluff stabilization projects."	The bulleted list is a general list of coastal resources as defined by the Coastal Act, and the first bullet (existing and planned development) encompasses these hard features.
Heal the Bay	Planning	"We suggest giving more guidance on how to assess "Sensitivity", "Adaptive Capacity", and "Consequences" (page 44). How are these characteristics judged or measured? Should they be based on the scientific literature, best professional judgment, or some other technique? Providing as much guidance as possible will help."	Example 3 provides some additional detail on what is meant by these terms. Language has been added to provide clarity to this section.
Heal the Bay	Planning	"We appreciate the inclusion of examples in the guidance documents to ground the recommendations in practical case studies. However, we are concerned that the wetland example is given a "high adaptive capacity" because in the case discussed it is surrounded by open space, which is not necessarily representative of California's wetlands. In Southern California, it is uncommon for a wetland to be surrounded by open space, therefore we are concerned this example gives a false impression that all wetlands have a high adaptive capacity and that habitat migration will be a simple solution. We recommend that the challenges with migration of habitats, like wetlands, be specifically included in the guidance document, along with the opportunities."	This hypothetical example is meant to be illustrative of a situation in which migration is possible as long as upland areas are protected as open space, though language has been added to note that this is a relatively uncommon scenario. Barriers to migration of wetlands and other habitats are noted in other areas of the document, including in Chapter 4 (Consequences of SLR for Communities, Coastal Resources, and Development).

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"Heal the Bay supports the approach taken in Section 4.1 of the guidance document that details recommendations for what to include in updated development standards. We are particularly supportive of the direction to limit subdivisions in areas vulnerable to sea-level rise, limit or prohibit hardened shoreline protection, and convert vulnerable areas to open space. In relation to redevelopment, we appreciate the recommendation to limit expansion in hazardous areas, yet we are concerned that the threshold of 50% or more of an existing structure is too high to trigger any significant alterations clause. We recommend a lower trigger for the application of significant alterations."	Thank you for your comment and review of the document. Language has been added to note that referenced text is just an example. As stated in the document, local governments may implement strategies in a variety of ways that fulfill the requirements of the Coastal Act and account for local conditions.
Heal the Bay	Adaptation	"The guidance document addresses impacts to local water supplies from saltwater intrusion (page 51), yet it fails to mention how better managing our water resources can help mitigate these impacts. By encouraging water recycling and stormwater capture projects in the coastal zone, potable water demand will decrease. This should lead to less stress being placed on local aquifers for potable water which can decrease the degree of saltwater intrusion. The guidance document should include mitigation measures capable of augmenting local water supplies such as regional water recycling programs, low impact development requirements, and green street strategies."	Many of these measures are mentioned in Chapter 7 (Adaptation Strategies). Low impact development and water recycling have been added to the water quality section in Chapter 7.
Heal the Bay	Adaptation	"The guidance document addresses hazards to siting and designing wastewater disposal systems in the shoreline and bluff zone (page 53). Wastewater disposal facilities are not the only type of infrastructure vulnerable to sea-level rise. The guidance document needs to go beyond wastewater disposal infrastructure to include all public and private infrastructures vulnerable to sea-level rise over the structure's life time."	Adaptation strategies related to planning for new development, including critical infrastructure, as well as strategies for existing development are included in Chapter 7 (Adaptation Strategies). It is expected that strategies will be implemented on a case-by-case basis in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	<p>"Under Section 4.2 (pages 53 and 54), we support the prioritization of “soft” or “living” shorelines over shoreline “protection” or armoring. We suggest plainly stating that soft or living shorelines are an alternative hard armoring (e.g. sea walls, revetments), and providing some discussion on the greater stability and sustainability of dune restorations that do not include hardening or rip rap below the dunes. Beach armoring is known to increase wave reflection and result in the narrowing of beaches; in addition, “coastal armoring, including seawalls and rock revetments, has been shown to reduce intertidal beach widths through the processes of placement loss, passive erosion, and increased erosion directly seaward of structures (ref).” A true living or soft shoreline that does not have a rock revetment as a foundation, but rather a natural dune form, is most ecologically robust and valuable. Leaving a rock revetment under a primary foredune may elevate the long-term risk of erosion, as the dune cannot shift with tides and wave action, which occurs in natural dune habitats. A revetment-based dune would have very different hydrology, affecting the water table and nutrient dynamics, which in turn could impact native vegetation and dune species (ref). We suggest that the guidance document clearly define natural habitat restoration projects differently from combined revetment/habitat projects, and prioritize natural habitat protection and restoration for sea-level rise adaptation strategies, as these approaches provide critical natural buffer capacity."</p>	<p>Strategies that utilize natural infrastructure as soft armoring are referenced in Chapter 7 (Adaptation Strategies). A section describing general adaptation options and related pros and cons has been added to this chapter. It is expected that adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.</p>
Heal the Bay	Policy and Legal analysis	<p>"We further suggest including marine protected areas (MPAs) as a special area for recreation within Section 4.3. Heal the Bay’s MPA Watch program assesses human use within and outside Los Angeles area MPAs. Since 2011, we found that the most common coastal uses are non-consumptive recreational activities, although some consumptive activities occur. Our MPA Watch data also show that more people are wildlife watching and tidepooling in Palos Verdes’ MPAs, with participation in both activities increasing notably within MPAs, while remaining relatively flat outside of the MPAs [ref]. These trends suggest that our local MPAs have recreational use value, and should be highlighted as such in local planning documents."</p>	<p>Thank you for your comment. This topic is outside the scope of this Guidance. However, the Commission is aware of and involved in issues related to MPAs and areas of special biological and economic significance and how they relate to Coastal Act resources.</p>

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"Heal the Bay supports the recommended LCP updates in Coastal Habitats Section 4.4 to minimize impacts to coastal habitats, as many coastal habitats also have great capacity to serve as buffers against sea-level rise and coastal climate change impacts. We recommend that local governments work with CCC biologists to identify these sensitive habitats in their mapping efforts, as well as potential habitat migration corridors. We further recommend that the component to "update policies to provide for new and restored coastal habitat" be more explicit – we support the no net loss provision, but believe that communities should pursue a net increase in habitats like wetlands and dunes, that have great potential to enhance sea-level rise adaptive capacity naturally."	Chapter 7 (Adaptation Strategies) includes a discussion of habitat-protective adaptation strategies, including the use of habitats as buffers against sea level rise, protection of wildlife corridors, "no net loss" provisions, and protection of upland areas to allow migration of coastal habitats. It is expected that these adaptation strategies will be implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Heal the Bay	Policy and Legal analysis	"Furthermore, we recommend that Section 4.4 include MPAs in the inventory and maps piece and encourage local municipalities to adopt ordinances minimizing impacts to these areas. In addition, MPAs areas should be considered sensitive habitat areas. MPAs sustain biological productivity through the protection of fish and marine invertebrates and their value in protecting the integrity of marine ecosystems, thereby maintaining healthy populations of all marine species. Additionally, we recommend adding potential loss of rare animals and plants to the "Potential impacts coastal habitats" element of Section 4.4 (page 57)."	Thank you for your comment. The MPA topic is outside the scope of this Guidance. However, the Commission is aware of and involved in issues related to MPAs and areas of special biological and economic significance and how they relate to Coastal Act resources. The Section 4.4 discussion of Coastal Habitat adaptation measures has been revised and moved to the new Chapter 7 (Adaptation Strategies).
Heal the Bay	Adaptation	"Under Section 4.6 (page 60), it is suggested that LCPs develop strategies to reduce nonpoint source pollution in the coastal zone to protect water quality. These strategies need to be expanded upon to include point source pollution reduction as well. Point and non-point sources collectively contribute to water quality impairments. Furthermore, we ask the CCC to specify within the guidance document how LCPs can protect water quality in light of sea-level rise. Specific examples and references should be included that highlight green infrastructure projects (low impact development, increase pervious surface, etc.) already implemented to protect water quality in the coastal zone. Working to implement hydromodification controls, runoff reduction, and infiltration projects upstream will also improve water quality in the coastal zone and should be included as examples in the guidance document. Heal the Bay also recommends that a provision be included in this section to restore natural channels in streams and waterways that have been armored or channelized to help reduce sedimentation impacts."	Many of these measures are mentioned in Chapter 7 (Adaptation Strategies), and some of these examples have been added.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"Additionally, the "Update siting and design policies" element of Section 4.6 (page 61) should include onsite waste treatment systems or septic systems. As inundation moves inland, flooding and groundwater daylighting is likely to increase. Septic systems, which rely on leach fields to disperse treated wastewater, will be at risk and are likely to cause surface water quality impairments. To address this risk, the guidance document should explicitly state that septic systems shall not be sited and designed in coastal zones at risk from sea-level rise."	Additional language on septic systems and other potential water quality impacts has been added to Chapter 7 (Adaptation Strategies).
Heal the Bay	Planning	"Many of the provisions within the CDP section of the guidance document mirror the LCP section of the document. As, such Heal the Bay's recommendations for the LCP section of the guidance document also apply to this section, along with the following detailed comment: Step 3 -- We suggest adding the following to the steps to identify potential resource impacts associated with the project (page 73): 'Identify species of concern and the habitats they depend on and map these resources in relation to the location of the proposed project'."	Change was made as suggested.
Heal the Bay	Planning	"Heal the Bay appreciates the inclusion of an additional research needs section within the guidance document, and we hope that the CCC works with local and state partners to pursue these important projects. Furthermore, we recommend a few additional research areas be added to this list, specifically economic and social vulnerabilities associated with sea-level rise impacts at the local municipal scale. The economic and social impacts associated with sea-level rise, including inundation and erosion, will likely vary by locality according to different physical, community, and development characteristics. Additionally, local municipalities will have to consider the environmental, economic, and social vulnerabilities when making planning and permitting decisions. Therefore, these analyses need to be conducted on a fine enough scale to help individual communities evaluate trade-offs and prepare for sea-level rise. We recommend the CCC look to Adapt LA and the associated Sea Level Rise Vulnerability Study for the City of Los Angeles study as an example of such research."	The Sea Level Rise Vulnerability Study for the City of Los Angeles (Adapt LA) is listed as an example in the new Appendix C (Resources for Addressing SLR). Additionally, language has been added to the Guidance acknowledging that adaptation options will be considered in light of local social and economic needs. Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging local jurisdictions to consider environmental justice and other social factors in their analyses.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"Additionally, further assessment of best management practices (BMPs) to address sea-level rise impacts is needed. Identifying the BMPs that most effectively adapt to or mitigate sea-level rise impacts and provide multiple benefits will help local municipalities with implementing their LCPs through permitting decisions."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges and BMPs as the state moves forward in sea level rise planning and adaptation. The Coastal Commission will continue supporting efforts to identify and track effectiveness of various adaptation strategies.
Heal the Bay	Adaptation	"Heal the Bay appreciates the thorough approach that the CCC has taken in listing a comprehensive set of adaptation measures...However, with such a large list of options, it may be difficult for municipalities to decide which options to pursue over others. We recommend that the CCC prioritize these adaptation measures by preference of which will most likely meet multiple goals of the Coastal Act. We understand the challenges with such a prioritization effort, especially with the complexities and site specific nature of the options. Therefore, a potential approach would be for the CCC to create three tiers ranging from most preferred to least preferred adaptation options, which would help provide local municipalities some context in how to pursue their planning efforts."	Chapter 7 (Adaptation Strategies) present a wide array of adaptation options that can be used on a case by case basis and are expected to reflect local priorities and goals. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and prioritizing adaptation options.
Heal the Bay	Adaptation	"We also have a few specific recommendations related to some of the options provided: Coastal Habitats: "Facilitation of wetland migration" As discussed above, we are concerned that many of California's wetlands are surrounded by development, making a habitat migration corridor or open space land use designation a significant challenge (page 157). In addition to facilitating wetland migration, we recommend that habitat restoration be included as an adaption option for natural resources, and that it include the suite of natural buffer habitats – dunes, beaches, and wetlands."	Chapter 7 provides a broad array of adaptation strategies, including several that promote habitat restoration.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Adaptation	"Water Quality/Water Supply Management: Table 20 (pages 158-159) does not list all management measures identified in the document and should be expanded. All measures relating to water quality and water supply management need to be included in the table as well as those mentioned above. This would include, but not limited to, the addition of specific zoning requirements for public and private infrastructure in at risk zones, prohibition of certain facilities (i.e. septic systems) impacting water quality when inundated, stormwater infiltration projects contributing to groundwater recharge, saltwater intrusion mitigation, water recycling, green infrastructure capable of mitigating sea-level rise, etc. It is important that Table 20 be expanded to incorporate recommendations from throughout the document."	Water Quality/Water Supply Management related adaptation strategies are expanded and presented in the new Chapter 7 (Adaptation Strategies).
Heal the Bay	Policy and Legal analysis	"Heal the Bay recommends that the CCC include a mitigation section in the sea-level rise policy guidance document that provides further direction on when and how mitigation should be required for unavoidable sea-level rise related impacts to Coastal Act resources. Mitigation is mentioned several times throughout the draft guidance document, both through in-kind and fee-based approaches. Clear direction on how to pursue mitigation for impacts that may stem from development and actions in projected sea-level rise hazard zones is needed to ensure a sufficient and consistent approach is pursued statewide. As such, we recommend that the CCC determine the mitigation ratio(s) for various impacts for situations that may trigger in-kind mitigation, as well as establish a well-defined approach to calculating mitigation fees. When mitigation fee calculations are pursued, we recommend that they account for all damages, including those to ecosystem services, which are particularly important for buffering against sea-level rise and associated coastal impacts."	Mitigation for impacts that may stem from development and actions in projected sea level rise hazard zones is an area of emerging policy development. As noted in Chapter 9 (Next Steps), Coastal Commission staff has initiated a Project of Special Merit to build upon the Commission's existing efforts to mitigate for the adverse impacts of shoreline development projects to public access and recreation by working with beach ecologists and a valuation economist to develop a method to quantify impacts to biological resources and beach ecology. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and prioritizing adaptation options.

Name/ Affiliation	Key Topic	Comment	Response
Heal the Bay	Policy and Legal analysis	<p>"The CCC's development of sea-level rise guidance presents an opportunity to incorporate policy guidance to address projects that may impact marine life or habitat in California's new network of marine protected areas (MPAs), and other special marine areas, through CCC programs and decisions. The CCC's Strategic Plan for 2013-2018 acknowledges the need for the Commission to develop updated policy guidance to address projects that may impact marine life or habitat in California's new network of MPAs...In short, MPA guidance will help realize the full potential of the MPA network and better meet the CCC's mandate to safeguard coast and ocean resources. Specifically, Heal the Bay recommends the CCC include language in the sea-level rise guidance document to identify MPAs, and other marine areas with protective designations, as sensitive areas meriting special protection under the Coastal Act. Section 30230 states that "[s]pecial protection should be given to areas and species of special biological or economic significance." A finding that MPAs are areas of special biological or economic significance reflects the strong overlap between Section 30230 and the goals of the MLPA to protect rare habitats, natural diversity of marine life and the integrity of marine ecosystems. ...The guidance could provide further justification for protecting MPAs by emphasizing their importance in sustaining biological productivity through the protection of large prolific fish and their value in protecting the integrity of marine ecosystems, thereby maintaining healthy populations of all marine species. To that end, the Marine Life Protection Act design process put a premium on siting MPAs in productive "hot spots" that encompass a rich diversity of habitats. In the long-term, we urge the CCC to establish criteria that must be met when considering projects that could have adverse impacts on MPAs and other sensitive marine areas. These components could also be integrated into guidance to local governments LCP updates. Specifically, we recommend that MPA guidance identify information that a project proponent must include or reference in a permit application in order for the application to be considered complete. For example, the application should include information on the location and purpose of MPAs and other special marine areas that could be affected by a proposed project."</p>	<p>Thank you for your comment. This topic is outside the scope of this Guidance. However, the Commission is aware of and involved in issues related to MPAs and areas of special biological and economic significance and how they relate to Coastal Act resources.</p>

Name/ Affiliation	Key Topic	Comment	Response
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Policy and Legal analysis	"The Draft Sea Level Rise Policy Guidance document stipulates that this is a guidance document and not a regulatory document. However, the level of specificity of the document would suggest otherwise in terms of how it will be used by regulatory agencies."	In the Executive Summary and Introduction, the document states that this material is guidance, not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Adaptation	"Page 6, #10, it states," ... avoid the perpetuation of shoreline armoring," which may be the only way to conform with #9 on page 6 - provide maximum protection of public beach and recreational resources. This seems to conflict with the intent of protecting natural resources."	A section on the pros and cons of hard protection has been added to Chapter 7 (Adaptation Strategies). As stated in guiding principles 12-13, when shoreline protection is necessary and allowable under the Coastal Act, the least-environmentally damaging alternative should be selected.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Policy and Legal analysis	"Page 7, Step 4 and Page 9, first paragraph -if a jurisdiction does not update its Local Coastal Plan (LCP), will new development need to conform with the requirements of the CCC SLR Policy Guidance in the meantime for Coastal Development Permits (CDPs)?"	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone and will continue to be reviewed on a case by case and site by site basis. Consult closely with CCC staff on how to apply the Guidance to a specific CDP application or LCP.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Planning	"The Guidance for Coastal Development Permits (CDP) on page 9 and pages 67-70 indicates that as part of each CDP, projects would need to complete a sea level rise analysis. If a local jurisdiction has completed a jurisdictional sea level rise analysis, that is reasonably current, a project specific sea level rise analysis should not be required as a matter of course. To use CEQA parlance, individual projects should be able to rely on and tier off of area-wide sea level rise studies. We recommend that the Guidance document be amended to accommodate this."	Language has been added emphasizing the idea of leveraging resources when conducting vulnerability assessments and hazards analyses, and an example of this may include using the work done for the LCP development/update process when performing analyses for individual CDPs. However, in many cases, it may be necessary to conduct more site specific analyses for a CDP. For this reason, CDPs will continue to be reviewed on a case-by-case basis.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Policy and Legal analysis	"Page 24, #5 - is the use of bluff retainment or shoreline protection devices completely forbidden? If a new development is proposed and an existing "bulkhead elevation" needs to be increased in elevation, is the Guidance document suggesting that the CDP not be approved?"	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone and will continue to be reviewed on a case by case and site by site basis. The Coastal Act does allow shoreline protection devices to protect existing development in certain situations.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Adaptation	"Page 25, #10 discusses "hard shoreline protection" but does not discuss "islands" surrounded by bulkheads that may need to be rebuilt due to age and be increased in elevation for sea level rise. This topic should be included."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation

Name/ Affiliation	Key Topic	Comment	Response
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Planning	"The suggestion on page 26 that individual projects evaluate impacts to an entire littoral cell or watershed, regardless of the project's size or its location in the littoral cell, or the characterization of the littoral cell itself, is too far reaching and broad. A one-size-fits all approach to analysis requirements will present an undue burden on many and be unnecessary for the majority of the coastal development permits that are requested, e.g. single family homes. While the language in item 13 hints at an acknowledgement of smaller projects, the text should be clarified and better articulate differentiation in cumulative impact requirements."	The language in Guiding Principle 15 notes that smaller scale projects likely won't need to consider impacts throughout an entire region, but that an LCP may be a good platform for understanding the cumulative risks and impacts, and language has been added to Chapter 5 (Addressing SLR in LCPs) related to regional coordination. Projects will continue to be reviewed on a case-by-case basis.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Planning	"Page 40 of the Guidance recommends that current and future hazard areas be modified on a five to 10 year basis as part of updating a Land Use Plan. A 10 to 20 year time frame is a more realistic interval and, at this time, more than adequate to anticipate changes associated with hazard areas."	Revisions have been made to this section to suggest that updates should be made as necessary to allow for incorporation of new science and changing conditions.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Adaptation	"As part of the menu of adaptation strategies listed in Appendix C, we recommend the addition of rolling easements, as identified in the California Climate Adaptation Strategy."	Change was made as suggested.
Scott Hess, Director, City of Huntington Beach, Dept. of Planning and Building	Adaptation	"With regard to the adaptation measures for Water Quality on page 158, it is not reasonable for the elimination of ocean outfalls due to the existing storm drain system within an agency. To redesign and construct new storm drain systems would be very costly and difficult to implement within established communities."	This adaptation strategy includes options to retrofit, relocate, or eliminate ocean outfalls. Adaptation strategies may not be applicable in all situations, but should instead be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Policy and Legal analysis	<p>"The Guidance calls for analyzing and potentially mitigating for potential impacts to coastal resources due to projected sea level rise whether or not the impact is related to a proposed project. It is unclear if the principles of mitigation having a nexus to the impact have been incorporated into the guidance. Is it the intention of the CCC to require a project proponent to mitigate when the potential resource impacts are due solely to sea level rise based on 2050 and 2100 scenarios but occur within the development limits? While it is important to consider, on a regional scale, as outlined in the Local Coastal Program (LCP) process, what the impacts of projected sea level rise to coastal resources might look like in 2050 and 2100 at the planning level, analyzing future impacts to coastal resources for 50 and 100 years in the future from sea level changes at the project level does not automatically equate to a nexus to a project impact...Caltrans requests that CCC amend the guidance to reflect an acknowledgement that in order to mitigate for impacts to coastal resources, there must be a connection to an actual project impact."</p>	<p>The Guidance is based on the Coastal Act's legal framework, including requirements for project impacts to be avoided, minimized, and mitigated. Guiding Principle #16 calls for mitigating unavoidable public coastal resource impacts to resources relating to permitting and shoreline management decisions. The Commission acknowledges and agrees that mitigation requirements must be based on project impacts and the Guidance has been developed with a clear understanding of the need to establish a nexus with project impacts in order to require mitigation.</p> <p>The Guidance does not assert that future sea level changes 'automatically' equate to a project impact. However, it does indicate that sea level changes that are expected over the duration of the project are expected to be factored into the project analysis. Not only are these considerations important for properly siting and engineering a sound project for its intended design life, but they are also necessary for adequately evaluating potential impacts that might be expected on coastal resources from the development. If such impacts cannot be avoided, then mitigation may be appropriate. The Guidance document reflects the Commission's and local governments' duty to evaluate such impacts and require commensurate mitigation where necessary.</p> <p>The guidance does not call for mitigating impacts that are unrelated to a proposed project. Reflecting Coastal Act policies, the Guidance first calls for avoidance and minimization measures, then adaptation measures to avoid future impacts. Such measures are primarily related to siting requirements, e.g., establishing deeper shoreline setbacks and wider buffers to allow for future inundation from sea level rise. If a project cannot be sited or designed to avoid hazards or other negative impacts caused by sea level rise over its lifetime, then mitigation may be one way to achieve compliance with applicable Coastal Act policies.</p>

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Planning	<p>"A cost benefit analysis must be included as a comparative factor in the Guidance: The Guidance does not include a cost benefit analysis but rather focuses on speculative impacts to resources in 2050 and 2100 scenarios. At what point do the required studies, adaptation/mitigation measures make the development project cost prohibitive given the funding restrictions to which Caltrans and others must adhere? In absence of a long range/multi-jurisdictional plan that addresses areas in which managed retreat or relocation of major roadway infrastructure is in the best interest of the state, Caltrans will need to continue to maintain existing facilities. The potential need to analyze and avoid "any" risks to hazards as well as protecting coastal resources at the same level of effort as creating new facilities may lead to costs that exceed existing funding limitations on roadway rehabilitation, operational, or safety projects. Caltrans recommends that a cost benefit analysis be included in the Guidance."</p>	<p>Providing a cost benefit analysis for specific types of development along the California coast is outside of the scope of this document. However, cost benefit analyses are typically included during the alternatives analysis required for evaluation of a proposed project for consistency with the Coastal Act or LCP (if applicable). With an issue such as sea level rise, and commensurate in scale with the scope of the need for contemplated project, the spectrum of short- and long-term economic, social and environmental costs and benefits of various options should be analyzed in order to choose the most appropriate response. In addition, the Commission recognizes that the costs of impacts to environmental and other public resources can be difficult to quantify, but public agencies do have a responsibility to take these into account based upon the best available science.</p> <p>The Commission acknowledges the significance of Caltrans' facilities and the need to maintain and improve the State's access and transportation networks, including existing road infrastructure. Further, we recognize that a phased approach to sea level rise planning and related construction may be necessary in the case of major public infrastructure, like the State Highway System. Such a phased approach requires sea level rise impacts to be considered when new development is proposed, but may or may not necessarily require immediate project changes. For example, a phased approach may allow for interim shoreline protection to maintain an existing road alignment, while the potential for a future road realignment is evaluated and pursued. The Commission welcomes continuing to work with Caltrans to identify critical areas where current and projected sea level rise dynamics call for creative project designs and innovative planning approaches through such tools as LCP amendments and Corridor Management Plans.</p>

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Policy and Legal analysis	<p>"Shoreline armoring is a common protection for linear infrastructure: The Guidance eliminates or restricts future shoreline armoring thereby limiting Caltrans' ability to maintain critical infrastructure. Caltrans roads provide the public with access to enjoy coastal resources. Section 30235 of the Coastal Act allows shoreline protection for coastal dependent uses...Restrictions on shoreline protection iterated previously in the Guidance may not be consistent with the scope of what Section 30235 allows. Further restrictions to shoreline armoring has the potential to impact Cal trans. The majority of projects seeking permit approval from CCC involve storm damage, erosion prevention, safety, and operational improvements. Many of these involve the installation of [SPDs] in order to maintain the integrity and safety of the travelling public while minimizing taxpayer costs. While it appears that the intent of the Guidance is to shift the responsibility for protection of building related development onto the property owners/developers, Caltrans has concerns with the potential cascading effect on the SHS during the shift from existing shoreline armoring practices towards living shoreline techniques/ managed retreat approaches. Cal trans recommends a close examination of the Guidance in relation to Section 30235."</p>	<p>A section on the legal context of adaptation planning, including issues related to shoreline protection and an expanded discussion of Section 30235, has been added to the Guidance. Chapter 7 also notes that hard protection may be an appropriate adaptation strategy in certain situations. Accordingly, the guidance does not eliminate the potential use of shoreline armoring, but it does make it clear that shoreline armoring has significant impacts on coastal resources that should be evaluated and addressed both in LCP planning and CDP evaluation. In addition, the Guidance acknowledges that Section 30235 limits the use of shoreline protection to specific circumstances.</p> <p>Further, we understand the utility of shoreline protection in certain cases where public infrastructure is threatened, especially as an interim step to address the immediate needs while planning for long term solutions is being carried out. Although we understand the need to minimize taxpayer costs for construction purposes, it is also necessary to consider the cost of maintaining public infrastructure in hazardous areas over time, along with the economic, social and environmental costs of impacts to sandy beaches and other coastal resources that can be lost as a result of shoreline protection. Finally, the Commission also agrees that planning and implementation strategies that combine land use and transportation plans and programs will be needed in order to expand opportunities for living shorelines and managed retreat techniques.</p>

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Planning	<p>"The LCP and CCC jurisdiction approach on sea level rise should be consistent with one another: Caltrans applauds the CCC for examining sea level rise and adaptation at a regional level as part of the LCP updates. The LCP regional effort identifies the potential for sea level rise impacts on land use, coastal resources and critical infrastructure and leads to an adaptation plan outlining policies to be implemented through the permitting process. In contrast, there is no proposed regional or program level approach in the original jurisdiction retained by CCC. As outlined in the Guidance, the Coastal Development Permit (CDP) process will analyze sea level rise on a project-by-project basis. This incremental approach will likely lead to an inconsistent implementation of the Guidance. Caltrans agrees with the need to consider sea level rise when planning and programming projects to make informed decisions and ensure that potential risk to facilities are minimized to the extent practicable. Throughout the Guidance, the LCP approach and the project level permitting are treated as interchangeable. There should be distinct differences in the level of detail and methodology that is applied for each. Caltrans recommends that areas of original jurisdiction should have a vulnerability assessment completed similar to the approach laid out for the LCPs. Additionally, Caltrans recommends that the LCP general planning approach also apply to the CDP process for identifying areas that are best suited for managed retreat as a long range planning solution and areas where continued use of shoreline armoring is the most feasible solution for maintaining vital public services."</p>	<p>Language has been added to Chapter 5 (Addressing SLR in LCPs) encouraging regional collaboration between all stakeholders at the local and State level where appropriate. However, this Guidance provides a broad framework for addressing sea level rise in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic and project-specific level. It is worth noting that the Commission often looks to the policies of certified LCPs for insights into the application of Coastal Act policies at the local level. Of course, more detailed work will be necessary to address specific challenges as the State moves forward in sea level rise planning and adaptation and the Commission looks forward to working with Caltrans as an important stakeholder in the process. We assume that these efforts will include identification of areas that are best suited for managed retreat as a long range planning solution and contemplation of whether continued use of shoreline armoring under certain circumstances is a desirable solution for maintaining vital public services.</p>
CA Dept. of Transportation	Policy and Legal analysis	<p>"Conflict is likely to arise between one or more of the CCC policies outlined in the Guidance: CCC should emphasize that conflict resolution (PRC 30007.5) will likely be an integral part of most sea level rise analyses. As the Guidance calls for consideration of all coastal resources as well as hazards under multiple scenarios projected to 2050 and 2100, it is likely that conflicting resource management strategies will increase in frequency and magnitude. Caltrans requests the CCC include a discussion of conflict resolution in the Guidance."</p>	<p>A section on the legal context of adaptation planning has been added to the Guidance. Certain adaptation measures, most notably, relocation of existing development inland, may cause inconsistencies with various Chapter 3 policies. When a proposed project is inconsistent with a Chapter 3 policy (or policies), and denial or modification of the project would be inconsistent with another policy, Section 30007.5 of the Coastal Act may, in some cases, provide for resolution of the policy conflict. With the conflict among several Coastal Act policies established, the Commission must resolve the conflict in a manner which on balance is the most protective of significant coastal resources.</p>

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Planning	"The Guidance, as well as many sections of the Coastal Act, is generally focused on land use developments and is often challenging to apply to linear features such as roads: Caltrans requests the opportunity to continue to work with CCC staff on establishing screening criteria for determining when and in what level of detail a proposed transportation project shall require a full analysis of sea level rise that will facilitate meeting both CCC and Caltrans' missions and goals."	Chapter 9 (Next Steps) specifically calls out items in the Coastal Commission's Strategic Plan (2012-2018) related to coordination with Caltrans to assess and address transportation infrastructure vulnerabilities and other sea-level-rise-related considerations. It will be possible for Commission and Caltrans to further discuss the potential development of screening criteria for project analysis as part of that process. Commission staff welcomes the opportunity to continue to work towards resolution of issues that arise due to sea level rise impacts, including those on linear public infrastructure. As required by the Coastal Act, all new development must be evaluated for consistency with Chapter 3 policies, except for the narrow exemptions provided (e.g., for certain repair and maintenance). However, even though all new development must be evaluated for potential resource impacts, including those due to sea level rise, in some cases, a phased response to address such impacts may be appropriate, with interim measures to address current and imminent conditions while long-term planning takes place. The Commission has used such an approach in numerous past cases, and is committed to continuing to work with Caltrans to help facilitate the use of such an approach where appropriate.
CA Dept. of Transportation	Planning	"Discussion regarding public infrastructure is focused on low lying roads. What type of analysis does CCC expect to be completed for other coastal roads in light of emphasis on preventing erosion?"	This Guidance provides a broad framework for addressing sea level rise in coastal zone permitting and land-use planning. It should be viewed as a starting point for additional planning on various related topics, including damage from intensifying storms and erosion impacts on roads. The interconnected considerations of linear infrastructure, including roads, railways, sewer, water and utilities, that service existing and planned land uses potentially affected by sea level rise will also need to be further examined in LCP updates and related planning processes.
CA Dept. of Transportation	General	"Step 2: Identify potential physical sea-level rise impacts... Should read 'Using the sea-level rise projections identified in step 1,'"	Language has been added clarifying that the projections identified in Step 1 should be carried throughout the other Steps.
CA Dept. of Transportation	Best Available Science	"After the first paragraph of STEP 4: Project Tidal Range ... Add "Local Tidal Elevations are available from tide gauges maintained by NOAA. Where there are no nearby gauges, NOAA recommends the VDatum software." Please acknowledge that Vdatum software is acceptable."	Change was made as suggested. Vdatum is acceptable.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Best Available Science	"Add resource: "NOAA Technical Report NOS 2010-01" Specifics of Information: "Technical Considerations for use of Geospatial Data in Sea Level Change Mapping and Assessment. Provides technical guidance to agencies, practitioners, and decision-makers seeking to use geospatial data to assist with sea level change assessments." Source: http://www.tidesandcurrents.noaa.gov/publications/tech_rpt_57.pdf "	Change was made as suggested.
CA Dept. of Transportation	Best Available Science	"Add resource: "Vdatum". Specifics of Information: "This is a software tool developed by NGS and The Office of Coast Survey (OCS) to transform geospatial data between a variety of vertical and horizontal datums. VDatum allows users to convert data from different datums to a common reference, particularly in coastal regions." Source: http://vdatum.noaa.gov/ "	Change was made as suggested.
CA Dept. of Transportation	Adaptation	"Many coastal soils are uplifted marine deposits and don't readily infiltrate water. Soft or vegetative infrastructure is generally unsuitable and unsustainable in these locations. If conditions warrant, hard structures should be considered."	Adaptation strategies may not be applicable in all situations, but should instead be implemented on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and reflects local conditions.
CA Dept. of Transportation	Planning	"This guidance is based on the assumption that the current state of the coast should be relatively static and thus does not take into account other factors that will affect habitat types, dune formation, etc. How will the guidance consider other factors that will change the current state of the coast habitats?"	This Guidance provides a broad framework for addressing sea level rise in coastal zone regulation and land-use planning; it should be viewed as a starting point for additional planning on various specific topics. The Commission does not agree that the Guidance assumes that the current state of the coast will be "relatively static." As a regular course of business in implementing the state's coastal program, the Commission's analysis does account for changing conditions along the shoreline, changes that can only be expected to become even more dynamic with anticipated sea level rise. As part of its decision-making processes, the Commission has an ongoing obligation to use the best available science to examine all factors that are known to potentially affect changes to coastal habitats. Additionally, Chapter 7 provides a broad array of adaptation strategies, including many that encourage nature-based solutions as well as restoration of natural processes.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Adaptation	"Convert Vulnerable areas to conservation or open space sites: Can the mechanisms proposed here be utilized by infrastructure agencies for mitigation?"	Protection of land for conservation and open space purposes could potentially be utilized for mitigation. The Commission has approved such mitigation strategies in the past and they could be useful tools for implementing aspects of the Guidance. However, the determination regarding the need for such mitigation, and whether or not it might be appropriate or adequate relative to a specific project, must be made on a case-by-case basis through the CDP review process.
CA Dept. of Transportation	Adaptation	"Rolling conservation easements are not a practicable policy recommendation since conservation easements are generally placed on entire parcels and the act of the easement rolling to another property would require that the adjacent property owners be willing and not have already developed their property. Suggest modifying this policy to state that conservation easements should be re-evaluated to ensure policies are consistent with best available science regarding sea level rise projections."	Chapter 7 provides a broad array of adaptation strategies, including rolling easements, and notes the importance of considering sea level rise in the implementation of these strategies. Implementing planned retreat approaches over time will likely include a number of other strategies as well, such as options for conservation easements over entire parcels, transfer of development rights programs and in lieu fee or buy out programs, depending on local conditions and opportunities. The Commission agrees that conservation easements should take into account the best available science for incorporating sea level rise considerations.
CA Dept. of Transportation	Adaptation	"Areas identified for public acquisition should also be identified as Areas of Conservation and be consistent with California DFW Areas of Conservation for better consistency throughout the state."	Local governments may identify a wide variety of lands for public acquisition and conservation and they are not limited to those areas that also meet certain criteria of the California Department of Fish and Wildlife. Therefore, this tool suggests that local governments, through the LCP planning process, should target any appropriate lands for public acquisition; it is reasonable to expect that a subset of these would be DFW Areas of Conservation.
CA Dept. of Transportation	Planning	"This document ignores the freshwater supply to wetlands. While I understand that this document focuses on SLR, freshwater supply is an important part of the whole story of how wetlands will be affected by SLR and whether or not maintaining them is feasible, especially with the addition of a new no-net-loss policy."	This Guidance provides a broad framework for addressing sea level rise in land-use planning in the coastal zone and therefore provides a starting point for additional planning on the topic-specific level. Habitat protection and restoration will occur on a project-specific basis to ensure consistency with Coastal Act policies, which includes looking at all of the necessary physical, hydrological and biological components for habitats to function and thrive over time.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Adaptation	"Retrofit or relocate outfalls deemed "at risk". Please provide further information as to what time frame and conditions this would be warranted. Is the idea to retrofit or relocate as other development projects are proposed in conjunction or as a stand alone effort? Further details would assist Caltrans in determining potential efforts and funding potentially required."	Specific adaptation strategies such as this are expected to be planned and implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions and opportunities. In general, the first tier priority areas are expected to be those that are identified as being at risk now or in the near term, in addition to those that are subject to chronic hazardous risk. We would expect that the particular conditions, criticality of the roadway connection, and the required time frames for planning and implementing responses will be major drivers that shape actions. This Guidance provides a broad framework for addressing sea level rise in coastal zone permits and planning. It is a starting point for more detailed work that will be necessary for the State and local governments to move forward on sea level rise planning and adaptation. Chapter 9 (Next Steps) specifically calls out related items in the Coastal Commission's Strategic Plan (2012-2018) and actions that will be needed in follow up to the Guidance.
CA Dept. of Transportation	Planning	"Please clarify which jurisdictions/ local governments that this step applies to. Presumably, it would be one of the cities/ counties required to complete an LCP required by the Coastal Act. It would be useful to provide a list of the cities and counties in an appendix that are 1- required to have an LCP, 2- which cities/ counties have current LCP that address sea level rise or climate change adaptation and 3- which LCPs need to be updated."	The Commission agrees that a compendium of LCP provisions specifically related to sea level rise would be a potentially important product to consider as it moves forward with the next steps to this Guidance (See Chapter 9). For cities and counties required to complete LCPs, and for a summary of the status of LCPs, visit the Coastal Commission Local Government resources page.
CA Dept. of Transportation	Planning	"Next to last paragraph on page, beginning with "This six-step process..." The guidance indicates that sea-level rise science is subject to change, and that planners will need to repeat the six-step process. These 2 sentences are unnecessary and infer that planners should regularly repeat this process on their own outside of the LCP update process."	As stated in this section, the 6-Step process is meant to occur in conjunction with LCP updates.
CA Dept. of Transportation	Best Available Science	"Footnote 28 lists a 4th approach to projecting future global sea level rise. This should be listed with the other three methods in the body of the text."	A change has been made to the footnote to clarify that expert judgment is not a modeling method, but has been used to interpret model projections.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Planning	"'Analysis should be conducted by a civil engineer with expertise in coastal process.' Is a Civil Engineer with expertise in coastal processes (?) the only type of acceptable coastal project analysis that will be considered/approved? Please provide further clarification as to level of experience/ expertise that is expected?"	The intent of the Commission is to ensure that the work is done by people with experience in these types of analyses. It is assumed that this will generally be civil engineers with expertise or experience in coastal processes; however other technical experts may be able to demonstrate equivalent qualifications for completing such tasks. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone and provide the basis for the information that is necessary for filing a CDP application.
CA Dept. of Transportation	Planning	"Document identifies multiple negative potential impacts due to climate change in general and SLR specifically. Should/could there be identification of potential positive impacts and how CCC policy should address such positive change?"	Reference to the potential for habitat creation and other possible benefits from sea level rise has been made in Step 3 of Chapter 5 (Addressing SLR in LCPs).
CA Dept. of Transportation	General	"Identification of \$100B of property risk from 1.4m SLR and "a 100-yr flood" is misleading. Such floods do not occur along the entire coast simultaneously."	The referenced statistic is cited from Heberger et al. 2009 and refers to property that lies in a zone that could be impacted by 1.4m of SLR plus a 100-yr flood.
CA Dept. of Transportation	Planning	"Requires use of "least environmentally damaging alternative", but does not address or identify the need for any selected alternative to provide functionality as a minimum criterion."	The Coastal Act requires an alternatives analysis to determine the least environmentally damaging <u>feasible</u> alternative. Coastal Act Section 30108 defines feasible 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." In other words, if an alternative does not 'provide functionality,' it cannot be considered a feasible alternative.
CA Dept. of Transportation	Best Available Science	"Text states that low end SLR projections from NRC Study "likely under represent future sea level rise". The NRC Study itself does not make any such suggestion. CCC should avoid this statement."	The quotation in question is referenced to Rahmstorf et al. (2012), not the NRC report. This claim is based on the idea that the low projections for sea level rise underrepresent the likely future scenario because they assume large greenhouse gas emissions reductions and minimal ice sheet loss.
CA Dept. of Transportation	Planning	"Every individual component is required to be viewed at its worst. When summed, these combinations of worst case scenarios can become overly conservative. For example, it's essentially required to assume highest case scenarios for bluff erosion and for storm events and worst case criteria for beach sand removal. However, higher rates of bluff erosion and larger storm events will produce higher volumes of sand."	A section on using scenario-based planning that considers a range of SLR projections has been added to Chapter 3 (Sea Level Rise Science), and updates have been made to emphasize the importance of considering a worst case scenario but allowing for planning or designing for lesser amounts of SLR. As stated throughout the Guidance, LCPs and CDPs will continue to be reviewed on a case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Best Available Science	"Document presumes that SLR will always lead to greater wave energy due to deeper ocean water. This isn't an accurate conceptual prognosis. SLR will also shift the ocean landward, such that the location of wave generation/amplification will likely occur at a new location at similar, or even potentially reduced, water depth. Ultimately, it is the seafloor bathymetry that will dictate wave energy, not simply an assumption of greater ocean depth from SLR."	For areas with complex offshore bathymetry, wave impact changes to due rising sea level may need to examine both offshore and nearshore conditions. Additional clarifications have been made to the section on waves in Appendix B.
CA Dept. of Transportation	Best Available Science	"Assessing impact of El Nino's and Pacific Decadal Oscillation (PDO) is both confusing and in need of reassessment. At least to some degree, El Nino effects are included in the historic tide record, so adding on El Nino affects is likely an overmagnification of the effects. Even a typical 19-yr tide record epoch will contain several El Nino/La Nina cycles. However, PDO cycles can vary from 20 – 40 years. Tide records don't adequately record these effects and they are not well understood. The scientific community currently presumes PDO and persistent winds are suppressing California coastal SLR....but there is no clear verification of this or means of determining either current extent or future impact. It is quite possible that when attempting to address a year 2100 "condition" that we should presume PDO effects as being helpful (i.e., cycle is such that Ca. Coast SLR is suppressed). Again, the guidance requires a presumption of worst case scenarios that may not occur simultaneously"	In developing scenarios, the intent is not to project the actual conditions for 2100 or any specific year, but to estimate a high range for at least one of the scenarios. While the guidance recommends examining the consequences from several possible sea level rise conditions, additional scenarios could look at several possible El Nino, PDO or tide conditions; the guidance should not be considered a limitation on the analysis that can be undertaken. Part of the analysis of the scenarios could examine sensitivity of erosion, inundation and flooding to the assumptions used for the analysis, and might estimate the level of potential over-magnification of the effects of PDO, for example.
CA Dept. of Transportation	Planning	"This could be an issue for roadside improvements in the future if wells are the only way to provide a source of water for landscaping efforts."	The section that is referenced calls for limiting, not prohibiting, development near vulnerable water supplies. Landscaping in such areas may or may not be appropriate development, depending on the circumstances. The type of landscaping can be chosen based on the available water supply; this is particularly important during drought conditions. In some cases, a supplemental water source may have to be obtained to at least allow for plant establishment.
CA Dept. of Transportation	General	"Reference to Hot Spot map. Although Caltrans will be conducting vulnerability assessments, due to the uncertainty of the final outcome of the "hot spot" map, please delete specific reference to the map."	Change made as suggested.
CA Dept. of Transportation	General	"Include definitions for 'Flooding' and 'Inundation'"	Change made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Best Available Science	"For equations dealing with projections outside of the 2030, 2050 and 2100 years. What is the value of projecting further than current "best available science" in consideration of the approach to monitor and re-evaluate projections and impacts on a regular basis? Although many local jurisdictions may want to consider other planning years, for consistency across all jurisdictions, all entities should use the 2030, 2050 and 2100 at a minimum"	The Guidance explains how to use equations to interpolate between the given NRC projection time periods. In certain cases, local jurisdiction may decide that it is important to choose other planning horizons based on expected project life or local priorities and goals.
CA Dept. of Transportation	Monitoring, Research Needs, and Next Steps	"Monitoring will require additional resources. If the expectation is that the applicant will be responsible for continued monitoring, then the cost of monitoring should be included in the cost-benefit analysis as recommended in the Caltrans Key comment 2."	We agree that the cost of appropriate monitoring should be factored in to the overall evaluation of the project. In addition, see the response to your above comment regarding cost benefit analyses.
CA Dept. of Transportation	General	"Appreciate the references to Caltrans examples. It is noteworthy that guidance to RTPAs and MPOs is referenced"	Thank you for your comment.
CA Dept. of Transportation	Planning	"The report states that buildings should have sea level rise accounted for in facility elevations. They require certification by engineers, architects and surveyors. That's OK but it is redundant to local authority for building permits. When applied to Caltrans, this may be problematic as we are entrusted with engineering responsibilities for the state highway system. It is unclear the level of authority the CCC implies over engineering decisions through CDP process. Questions to validate outcomes may be appropriate, but neither the CCC nor local agencies administering CDPs would have the authority to certify Caltrans engineering practices."	This material is meant to provide broad statewide guidance for how to consider sea level rise from a coastal zone management perspective and comply with Coastal Act requirements. California's coastal program already is implemented in partnership with local governments that integrate with their existing land use and zoning authorities, including such actions as the review and issuance of building permits. Coastal projects will continue to be reviewed on a case-by-case basis, with the Coastal Act and certified LCPs remaining the standard of review. This Guidance intends to familiarize local governments, agencies, applicants and the public with sea level rise issues and possible responses in order to ensure that coastal zone projects and plans have considered sea level rise in an appropriate manner that is consistent with Coastal Act policies. In practice, engineering questions raised by staff reviewing CDPs typically revolve around whether the proposed project will function as it designed to perform and whether or not project alternatives with fewer resource impacts and more long term resiliency may be available.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Policy and Legal analysis	"Authority and responsibility for various proposed policies should be addressed and clarified throughout."	In general, the authority for the various recommendations in the Guidance stems from the Coastal Act and specific Coastal Act policy sections are cited throughout the document. The primary parties responsible for carrying out the recommendations are the Coastal Commission (including its staff) and the coastal local governments in carrying out their Coastal Act planning and regulatory mandates. Commission staff will continue to work with other agencies and partners to coordinate sea level rise planning work. Chapter 9 (Next Steps) specifically calls out related items in the Coastal Commission's Strategic Plan (2012-2018).
CA Dept. of Transportation	General	"The paragraph discusses recent efforts to prepare for Sea Level Rise: Sentences in this paragraph regarding the "State Sea Level Rise Resolution (2011) and establishing the State Sea Level Rise Guidance (2013): please provide the agency and consistent references. Resolution is cited in the references as a (OPC-2010) document."	The paragraph in question refers to 3 distinct state sea level rise efforts led by the OPC, including the State Sea-Level Rise Resolution (2011), the <i>Interim</i> Sea-Level Rise Guidance (2010), and the update to the 2010 Guidance, now termed the State Sea-Level Rise Guidance (2013). These references have been checked and updated to ensure consistency.
CA Dept. of Transportation	Planning	"Determining planning horizons. If LCPs begin using other planning scenarios other than the 2030, 2050 and 2100 sea level rise projections, it may become difficult for other agencies to maintain consistency in analysis (apples to apples comparison). Suggest that all LCP plans contain the minimum 2030, 2050 and 2100 year analysis and if other years are warranted, add analysis in addition."	Language has been added to the Guidance encouraging regional coordination where appropriate. This coordination will provide jurisdictions the opportunity to match their planning horizons to facilitate information sharing and other planning coordination. It may be appropriate for certain categories of development, such as critical infrastructure, to recommend that everyone use a certain scenario. In general, infrastructure is managed by public or publically regulated entities who already plan for maintenance, obsolescence and replacement (in contrast to most private residential and commercial development whose owners may repair and upgrade as necessary, but usually do not think of their structures as having a finite life and might not have as much ability to relocate – also the consequences of damage are not as widespread) so agreeing on a common scenario may be acceptable. The Commission does recognize that the use of planning scenarios for the 2030, 2050 and 2100 sea level rise projections is being followed by many entities.
CA Dept. of Transportation	Planning	"b. iii, unclear what is meant by 'are there amounts of sea level rise that cause sensitivity to sea-level rise increase'"	Revisions to this section have been made to provide additional clarity.

Name/ Affiliation	Key Topic	Comment	Response
CA Dept. of Transportation	Planning	""add policies to address impacts to transportation routes'...'establish new alternative transportation routes'... Changes in transportation routes/ facilities shall be coordinated with/ planned in conjunction with Caltrans."	Change was made as suggested.
Chris Webb, Moffat & Nichol	Planning	"A conservative approach in planning and engineering is appropriate with greater unknowns for the future, but certain recommendations in the guidance document appear to be potentially overly conservative in our opinion at the present. A delicate balance must be struck between protection, economics, and public and private property rights."	Language has been added to Chapter 7 (Adaptation Strategies) acknowledging the need for users of this Guidance to think creatively and to adaptively respond to changing conditions, new science, and new adaptation opportunities. The importance of balancing and considering local conditions, goals, and priorities is acknowledged throughout the Guidance.
Chris Webb, Moffat & Nichol	Best Available Science	"The guidance, specifically Appendix B, outlines an approach that analyzes impacts to a given coastal site from a combination of long-term shoreline erosion, dynamic water levels (storm surge, 100 year wave run-up or conditions greater than the 100-year storm wave event), and static water levels (high tide plus SLR). The approach by state agencies recently has been to apply the high-end of the range of sea level estimates (5.5 feet), while not applying the projection of 3 feet. Under extremely conservative planning, it may be more appropriate to consider the projection rather than the high end. The combined probability of the conditions mentioned above with a maximum sea level rise estimate represents an event with an unknown, but low probability. Individual CDPs and LCPs should have discretion in selecting reasonable combinations of water levels and conditions for a specific site to inform setback limits, adaptation measures, etc"	A section on using scenario-based planning that considers a range of SLR projections has been added to Chapter 3 (Sea Level Rise Science), and updates have been made to emphasize the importance of considering a worst case scenario but allowing for planning or designing for lesser amounts of SLR. As stated throughout the Guidance, LCPs and CDPs will continue to be reviewed on a case-by-case basis.
Chris Webb, Moffat & Nichol	Best Available Science	"The typical range for tsunamis is referenced as 20 to 26 feet in the guidance document. Although the destructive nature of these events is acknowledged, the southern California region may have experienced the maximum far-field tsunamis (from Chile with a magnitude of 9.5 in 1960 and from Alaska with a magnitude of 9.2 in 1964). Thus the water surface elevation changes experienced from these events may be the maximum to be expected in the region. Existing water level data indicate southern California may experience water level changes on the magnitude of 4 feet on a decadal basis from these events (San Diego Region Sea Level Rise Study by M&N 2013). Recent experience in other areas indicates that design to accommodate high return (ebb) flow velocities may be more critical than designing to exceed wave heights. Designs to accommodate extremely high water levels could be costly and may result in impacts to other coastal resources (e.g. views). M&N recommends that the discretion be applied in the consideration of these events in design."	In developing scenarios, the intent is not to project the actual conditions for any specific year or event, but to estimate a high range for at least one of the scenarios. While the guidance recommends examining the consequences from several possible sea level rise conditions, additional scenarios could look at several possible tsunami scenarios; the guidance should not be considered a limitation on the analysis that can be undertaken. Part of the analysis of the scenarios could examine sensitivity of erosion, flow velocities, inundation, and flooding to the assumptions used for the analysis, and might estimate the level of potential over-magnification of the effects of a tsunami, for example.

Name/ Affiliation	Key Topic	Comment	Response
Chris Webb, Moffat & Nichol	Planning	"The document calls for provision of maximum public participation in planning and the regulatory processes. We understand the need for public input but caution the workgroup that over-dependence on public comment and participation can significantly slow the process and in some cases present unnecessary obstacles. Moderation in applying the public participation process is recommended."	Commission staff will continue to work with the public through the solicitation of public comment at Coastal Commission hearings, trainings, and staff meetings.
Chris Webb, Moffat & Nichol	Best Available Science	"The document indicates that when there is a range of erosion rates from historic trends, the high rate should be used to project future erosion with rising sea level conditions. Latitude may be needed in this approach to allow for lower estimates depending on site-specific conditions. For instance, if historic erosion has occurred through relatively erodible material, but future erosion will encounter more resistant material and thus slow the erosion rate."	Change was made as suggested.
Chris Webb, Moffat & Nichol	Adaptation	"Regarding hard coastal protection, the guidance indicates that CDPs should require that hard protection be monitored for damage from sea-level rise hazards, that permits be re-opened after some time period to assess effectiveness in light of sea-level rise, and that options for removal be incorporated into the design, in the event the structure may no longer be useful or appropriate in the future. We recommend that another approach be considered that consists of further improvement of the structure to withstand future conditions if it will not adversely impact littoral sediment transport patterns or if its effects can be completely mitigated."	The section on hard protection in Chapter 7 has been clarified to address the potential need for maintenance or alteration of shoreline protection, as consistent with the Coastal Act.

Name/ Affiliation	Key Topic	Comment	Response
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Policy and Legal analysis	<p>"Clarity is needed with regard to Coastal Act provisions and sea-level rise in a Port Master Plan: ...the policies of Chapter 8 are designed to facilitate port related development while balancing socioeconomic and environmental factors...In contrast, Chapter 3 of the Coastal Act, which governs the coastal zone outside of ports (i.e., Local Coastal Programs) and appealable developments within ports, focuses on the preservation of coastal access, recreational opportunities and biological resources in the face development. The Sea-Level Rise Policy states that it is intended as "guidance, not regulations" and it "does not govern the planning and regulatory actions that the Commission or local governments may take under the Coastal Act..." (Sea-Level Rise Policy, p. 12.) Yet, it also states that the Sea-Level Rise Policy guidance is rooted in certain fundamental principles...of the Coastal Act...Coastal Act policies are then enumerated and described. These two statements seem contradictory. Is it the Coastal Commission's position that addressing sea-level rise is already required by the Coastal Act? If so, is the Sea-Level Rise Policy intended to be a suggested roadmap for addressing sea-level rise? Will the Coastal Commission in the future require such amendments to Local Coastal Programs and Port Master Plans?...will the Sea-Level Rise Policy be used by the Coastal Commission when reviewing amendments to plans or Coastal Development Permits? ... If it is the Coastal Commission's position that sea-level rise must be addressed in Port Master Plans, the Sea-Level Rise Policy fails to cite to a Chapter 8 policy requiring such consideration. The only Chapter 8 policy cited to in the Sea-Level Rise Policy is Section 30711, Preparation and Contents of Port Master Plan, for the principle of maximization of agency coordination and public participation. (Sea-Level Rise Policy, p. 6.) While CAPA agrees that agency coordination and public participation are vital to the success of any public process, that Section of Chapter 8 fails to grant a port or the Coastal Commission the authority to require an amendment to a Master Plan to address sea-level rise. Clarification on this point is needed. If the Sea-Level Rise Policy is going to be treated as a regulation, then it should be processed and approved pursuant to the Administrative Procedure Act."</p>	<p>This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Coastal Act (specifically, Chapter 8) will remain the standard of review for Port Master Plans, and this Guidance is not meant to supersede those specific legislative requirements. This document is guidance in applying the enforceable policies of the Coastal Act, but is not in and of itself an enforceable policy.</p>

Name/ Affiliation	Key Topic	Comment	Response
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Policy and Legal analysis	"The one-size-fits-all approach in the Policy Guidance conflicts with the Coastal Act's regulatory structure for ports: As discussed in Section I of this letter, the regulatory mandates of the Coastal Act are different for ports as compared to cities or counties. Yet, the Sea-Level Rise Policy treats Port Master Plans and Local Coastal Programs the same, undermining the Coastal Act's regulatory structure and the discrete authority granted to ports under the Coastal Act. For instance, the Sea-Level Rise Policy does not limit sea-level rise adaptation measures designed to address Chapter 3 policies - like development standards, access or recreation - to cities, counties or appealable development within ports. This approach seems to indicate that these measures should also be incorporated into Port Master Plans, which is contrary to the requirements of the Coastal Act."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. As stated in the Guidance, that adaptation strategies presented in Chapter 7 will not be applicable in all situations, but should instead be implemented on a case-by-case basis in a manner that fulfills the requirements of the Coastal Act and accounts for local conditions. The Coastal Act (specifically, Chapter 8) will remain the standard of review for Port Master Plans, and this Guidance is not meant to supersede those specific legislative requirements. This document is guidance in applying the enforceable policies of the Coastal Act, but is not in and of itself an enforceable policy.
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Policy and Legal analysis	"CAPA suggests that if the Coastal Act grants independent authority to regulate potential sea-level rise impacts in Port Master Plans, the Coastal Commission develop and adopt separate policy guidance for ports. Alternatively, the Sea-Level Rise Policy should clearly identify the guidance intended for ports. The policy should also address the unique nature of "mixed-use" ports where non-coastal dependent uses (i.e., appealable development) are often located adjacent to port facilities, as well as situations where the portions of a port is "built out" and routinely undergoes redevelopment on currently developed parcels. Addressing such circumstances may avoid unintended consequences as well. For example, the Sea-Level Rise Policy suggests shoreline protection should be prohibited for non-coastal dependent uses. There could be a pattern of development where a non-coastal dependent use is located adjacent to a coastal dependent use and because no shoreline protection is allowed for the non-coastal dependent use erosion is accelerated. Consequently, the coastal dependent use would be severely threatened by the erosion."	As stated in the Executive Summary, this document is guidance, not regulations. The Coastal Act, certified LCPs, and other related planning documents (including Port Master Plans) remain the standard of review for projects in the Coastal Zone. Seawalls and other shoreline protective structures will continue to be reviewed on a case-by-case basis and permitted as applicable within the Coastal Act. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Adaptation	"After identifying areas that may be impacted by sea-level rise, the Sea-Level Rise Policy includes "adaptation measures" that should be incorporated into a Port Master Plan to mitigate the sea-level rise impacts. (Sea-Level Rise Policy, pp. 49-63.) Many of those measures seem to be designed to limit or prohibit development (or redevelopment) instead of altering the design of development to accommodate sea-level rise...These types of measures present severe economic impacts and potential legal implications (i.e., regulatory takings, abuse of discretion, etc.). CAPA suggests that other measures such as engineering design, alternative materials, raised foundation, siting of development and use of shoreline protection for built areas be included in the Sea-Level Rise Policy."	Chapter 7 (Adaptation Strategies) lists a wide array of adaptation strategies that include altering the design of development to accommodate sea level rise. It is expected that the strategies will be applied on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Planning	"In addition, CAPA recommends that project life or design life be removed from consideration in the Sea-Level Rise Policy document. Project life is difficult to determine. Also, it is not clear how the Commission established the 75 to 100 year design life. Predictions for building life-spans are extremely rough estimates, and one estimation technique is based on the type of construction: Temporary: 0-5 years; Semi-permanent: 5-25 years; Permanent: over 25 years: while other methods utilize tables of the expected life of building components or various material types. Architects and engineers, for example, may select particular building materials/components based upon the expected life of the project. Many factors affect the life expectancy of building components, including the quality of the component, quality of installation, level of maintenance, weather and climatic conditions, and intensity of use. If there are no cost constraints, maintenance and repair activities can indefinitely extend the physical life of the structure. Building a new structure that industry determines to have a 25-30 year life to handle expected sea-level rise in 100 years could increase the costs for construction and make capital improvement projects un-affordable."	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide clarity on this issue. However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. It is expected that adaptation strategies will be implemented on a case-by-case basis and a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Policy and Legal analysis	"Certain requirements depend on "feasibility," which is an undefined term: Many of the Coastal Development Permit measures in the Sea-Level Rise Policy depend on the feasibility of a project's siting or design. However, the Sea-Level Rise Policy does not define what "feasible" or "feasibility" mean. Nor does the Sea-Level Rise Policy refer to the Coastal Act's definition of "feasible". (Coastal Act Section 15364 (defining "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors").) For example, if feasible and without shoreline protection, development should not be proposed in locations subject to current and future risks from sea-level rise (i.e., inundation, flooding, erosion, etc.). (Sea-Level Rise Policy, p. 77.) But there is nothing guiding such a feasibility analysis. Clarification on this point would be helpful."	The Coastal Act and certified LCPs remain the standard of review of for projects in the Coastal Zone, and feasibility will continued to be analyzed on a case-by-case basis, according to the Coastal Act definition in Section 30108. The definition of feasible has also been added to the glossary.
Tim Schott, Executive Director, CA Assoc. of Port Authorities	Funding	"Deficiency in resources to implement the Sea-Level Rise Policy: Implementation of the Sea-Level Rise Policy requires modeling, data collection, mapping, public outreach, drafting, and monitoring. Additionally, California Environmental Quality Act (CEQA) review would be required for any Port Master Plan amendment. The costs for these tasks are anticipated to be in the hundreds of thousands of dollars. Without independent funding sources, such as the grant program for Local Coastal Programs (which is unavailable to ports), CAPA is concerned with the financial burden of implementing the Sea-Level Rise Policy. The Coastal Commission should consider creating a funding source or grant program for ports to implement the Sea-Level Rise Policy."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities, including the OPC LCP Sea-Level Rise Adaptation Grant, which includes Port Master Plan efforts as eligible projects. Additionally, staff recognizes the costly nature of sea level rise planning and will continue to coordinate with other state agencies and partners on these challenges.
Pat Saley, Goleta Slough Management Committee	General	"Support for providing local jurisdictions' with policy guidance - Sea Level Rise is an important issue that is being discussed up and down the state and the guidance the Coastal Commission is providing is appreciated and very helpful."	Thank you for your comment.

Name/ Affiliation	Key Topic	Comment	Response
Pat Saley, Goleta Slough Management Committee	Funding	"Need for adequate staffing and funding to update LCPs - We believe it is timely to support the inclusion of SLR policies in Local Coastal Programs and encourage the Commission to adequately staff this effort so that the LCP updates can be completed in a timely fashion. Additional funding for local jurisdictions to update their LCPs would also accelerate the process to include SLR policies their plans. Step 5 on p. 7 ("Develop or update LCP and certify with California Coastal Commission") is one of the most important steps in the update process and adequate funding for the Commission and local jurisdictions is the only way to achieve this"	Thank you for your comment. Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities. Additionally, staff recognizes the costly nature of sea level rise planning and will continue to coordinate with other state agencies and partners on these challenges.
Pat Saley, Goleta Slough Management Committee	Planning	"Updated LCP maps relating to SLR - The funding provided should include sufficient funds to update various LCP maps that are potentially affected by SLR based on up-to-date information. With sea level rise, the Mean High Tide Line (MHTL) is moving inland and must be remapped as part of periodic LCP Updates ideally occurring every 5 years. This is critically important because it determines whether the CCC or the local government has original permit jurisdiction and approval authority over CDPs. Similarly, LCP maps of appeal jurisdictions must also be periodically updated as sea level rises and additional areas of wetlands are identified."	The importance of reassessing the public trust boundary is referenced in Chapter 9 (Next Steps). Please refer to the Introduction and Appendix E for a discussion of grant opportunities available at the time of publication. Language has been added emphasizing the need for continued funding and technical support for local governments.
Pat Saley, Goleta Slough Management Committee	Adaptation	"Use of natural processes – We support the focus on using the best available science to protect coastal resources and using natural processes rather than relying on coastal armoring."	Thank you for your comment. Chapter 7 (Adaptation Strategies) presents and array of adaptation options, including the use of natural infrastructure.
Pat Saley, Goleta Slough Management Committee	Planning	"Sample SLR policies – We are presently working on a SLR Vulnerability Assessment and anticipate writing policies for inclusion in our Goleta Slough Ecosystem Management Plan. We were disappointed to find that the SLR Policy Guidance did not include any sample policy language. This is a major oversight that should be corrected in the final document if it is to truly provide guidance to local jurisdictions and those interested in addressing SLR. Issues to be covered in the sample policies should include short term v. long term management strategies, increases in SLR that trigger further study and need for additional adaptation measures, etc. The sample policies need to recognize that it is very speculative to estimate SLR and its effects in a given timeframe (e.g., 2050 or 2100) and a better approach would be to base adaptations and other actions on observed increases in sea level over time. The City of Santa Cruz is to be has a Climate Adaptation Plan that includes goals and objectives that are a good place to start. (http://www.cityofsantacruz.com/Modules/ShowDocument.aspx?documentid=23643) "	The rationale for planning ahead is discussed in Chapter 3 (Sea Level Rise Science), and is referenced in new sections on abrupt change, extreme events, and scenario-based planning. As mentioned in Chapter 7 (Adaptation Strategies), strategies will need to be adaptive and flexible in order to respond to changing conditions. The Santa Cruz Climate Action Plan is referenced in Appendix C (Resources for Addressing SLR). This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Pat Saley, Goleta Slough Management Committee	Best Available Science	"Website that collects relevant SLR studies, policy documents, etc. – It may be appropriate for the Coastal Commission to serve as a “clearinghouse” of all info relating to SLR including providing links to studies and LCPs that address the issue."	Appendix C (Resources for Addressing SLR) contains numerous technical resources, including data clearinghouses. The Commission is planning on updating the Guidance as necessary, and providing information about best available science on the Coastal Commission website.
Pat Saley, Goleta Slough Management Committee	Best Available Science	"Other effects of climate change and SLR – There are many management strategies, habitats and processes that are directly and indirectly affected by climate change including increases in wildfire danger, flooding, ocean acidification, flooding, drought, coastal erosion and salt water intrusion. The guidance should give more consideration to these factors, especially as they relate to coastal hazards and impacts to coastal ecosystems."	Language has been added to Chapter 3 (Sea Level Rise Science) about extreme events and storms and how their impacts might be influenced by sea level rise. Chapter 4 describes consequences of sea level rise for coastal resources and development and has also been enhanced with additional descriptions of impacts. Recognition of other climate change related impacts is presented in the Introduction; however, the focus of this document is adaptation planning for the impacts of sea level rise.
Pat Saley, Goleta Slough Management Committee	Adaptation	"Recognition of competing interests and tradeoffs – It is important for the Commission to include consideration of the numerous competing interests that could be affected by SLR including protecting habitat for state and federal endangered species, flood risks, health risks such as increases in mosquitos, potential damage to critical infrastructure and passive and active coastal recreation facilities and opportunities. Any adaptations that are pursued need to take a balanced approach that considers Coastal Act policies as well as other important priorities."	Recognition of the trade-offs involved in adaptation planning has been added to Chapter 7 (Adaptation Strategies).
Pat Saley, Goleta Slough Management Committee	Policy and Legal analysis	"Coastal armoring impacts to sand supply and access – The guidance states that armoring may be allowed under certain circumstances (page 25, #10). We suggest you clarify that coastal armoring is allowed only when impacts to sand supply are avoided."	The material is designed to be broad statewide guidance and each Guiding Principle cites relevant sections of the Coastal Act to provide a reference for additional detail. The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone.
Pat Saley, Goleta Slough Management Committee	Planning	"Development in ESHA and mitigation – ...First, on page 26, #13, it should state that habitat mitigation must not be located in an area that would be threatened by SLR in the near term. Second, we encourage the Commission to be more flexible in terms of the type and location of habitat mitigation. We believe it is more appropriate to take an ecological and systems approach to mitigation rather than the “like kind of habitat or species mitigation onsite.” Habitats do not respect jurisdictional lines and there is synergy in having contiguous habitats rather than isolated habitats that happen to be on the site where the impact is expected to occur."	Reference to ensuring that mitigation measures take into account sea level rise has been added to Chapter 7 (Adaptation Strategies). The Commission recognizes the importance of developing improved mitigation strategies, and will continue these efforts in the future.

Name/ Affiliation	Key Topic	Comment	Response
Pat Saley, Goleta Slough Management Committee	Adaptation	"Changes in Sediment Supply and Movement (p. 30) – One of the biggest changes as a result of SLR is how coastal planners look at sediment deposition. Given development and other changes in watersheds, increased runoff and sedimentation have been a problem for coastal GSMC lagoons and marshes. However, SLR has changed how sediment is perceived as, when managed properly, it can help wetland systems keep pace with SLR so that valuable habitats and systems are not reduced significantly in size or eradicated. This is one of the policy areas that should be discussed in the guidance as outlined in #5 above."	Sediment dynamics are referenced in a number of places throughout the document, including in several adaptation strategies in Chapter 7. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Pat Saley, Goleta Slough Management Committee	Adaptation	"Wetland migration – On p. 34, the guidance discusses the consequences of SLR on coastal resources including wetlands that may migrate inland to accommodate higher sea levels. It would be helpful to provide guidance to local jurisdictions relating to placing restrictions on the use of land in areas where wetlands are expected to migrate. Otherwise, these low-lying areas will be filled, and some types of wetlands may disappear."	Clustering development away from areas where wetlands and other coastal habitats may migrate with sea level rise is discussed in Chapter 7 (Adaptation Strategies).
Steven Aceti, California Coastal Coalition	Policy and Legal analysis	"The Guidance may be interpreted by many as a regulatory document in the future."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone.
Steven Aceti, California Coastal Coalition	Best Available Science	"The Guidance contains discrepancies in SLR projections."	The document contains descriptions of global, national, and regional sea level rise projections. Updates have been made to ensure that there is consistency throughout the document.
Steven Aceti, California Coastal Coalition	Planning	"The highly technical baseline analysis of coastal conditions called for in the Local Hazard Condition Analysis will be costly and time-intensive."	Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.
Steven Aceti, California Coastal Coalition	Policy and Legal analysis	"There will be unpredictability associated with certifying LCPs and Implementation Plans in conformance with the Guidance if it morphs into a set of regulations."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Chapter 3 of the Coastal Act and certified LCPs remains the standard of review for projects in the Coastal Zone; LCPs and Implementation Plans will continue to be reviewed on a case by case basis.
Steven Aceti, California Coastal Coalition	Policy and Legal analysis	"There will be significant fiscal impacts on coastal communities in an effort to comply with the Guidance if it morphs into a set of regulations."	In the Executive Summary and Introduction, the document states that this material is guidance not regulations. Language has been added to the document emphasizing the need for continued funding and support for local jurisdictions. Please refer to the Introduction and Appendix E for information regarding grant opportunities.

Name/ Affiliation	Key Topic	Comment	Response
Steven Aceti, California Coastal Coalition	Best Available Science	"The Guidance did not take into account studies and papers that have been published by Dr. Scott Sherman of Scripps Institution of Oceanography ("SIO"), Dr. Reinhart Flick of SIO and the Commission's own coastal engineer, Lesley Ewing, showing that (a) SLR in Southern California is projected to be significantly lower than SLR in the Central and Northern Coast regions of California and the rest of the nation, and (b) beach sand nourishment at a number of locations in Southern California would mitigate against projected inundation of land along the coast."	Commission staff was not aware of the research by Dr. Scott Sherman at SIO. After searching for the SIO directory and for any research on sea level rise by Dr. Scott Sherman, staff determined that the researcher in question was Dr. Scott Jenkins. Through e-mail correspondence, Dr. Scott Jenkins told staff that he has not done research on sea level rise projections. About a decade ago, Dr. Jenkins did write a paper noting that the San Diego shoreline would need large amounts of new sand to maintain beaches with a large amount of sea level rise. The research by Dr. Flick and Dr. Ewing examined the volumes of sand necessary to maintain beaches for various sea level rise scenarios, also finding that large volumes of sand might be needed for large amounts of sea level rise. Neither the paper by Dr. Scott Jenkins nor the paper by Dr. Reinhart Flick and Dr. Ewing say that SLR in Southern California is projected to be significantly lower than SLR in the Central or Northern Coast regions of California and the rest of the nation. In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends using the regional projections from the 2012 NRC report or an equivalent resource. Chapter 3 and Appendix A include a description of best available science on sea level rise at global, national, and regional scales. As broad statewide guidance, this document does not include highly localized details but rather a framework for addressing SLR in Coastal Commission-related land-use planning. Beach nourishment may be an adequate adaptation strategy in a number of locations or at a variety of time scales. As stated in Chapter 7, adaptation strategies should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Steven Aceti, California Coastal Coalition	Planning	"It does not appear that the Commission has coordinated its efforts on SLR with the Department of Parks and Recreation's Facilities Division, which manages the state's beach restoration program formerly managed by the Department of Boating & Waterways (AB 64, The Public Beach Restoration Act, Laws of 1999), nor does it appear that the Guidance has been adequately vetted by state agencies, departments and commissions that have coastal jurisdiction, including the state's Ocean Protection Council."	Thank you for your comment. The Commission has been and will continue to coordinate with other state agencies.

Name/ Affiliation	Key Topic	Comment	Response
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Best Available Science	"It is prudent that the Guidance Document acknowledge that there is a high degree of scientific uncertainty as to the extent of sea-level rise and that the science is still evolving (Principles 2 and 3)."	Thank you for your comment.
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Best Available Science	"We support the provision that the Coastal Commission will re-examine the best available science at least every 5 years or as needed with the release of new information on sea-level rise. It is equally important that the Coastal Commission also periodically re-examine and reassess this document to determine its value in providing practical guidance to agencies, local governments, and the public."	Thank you for your comment. The Commission intends to provide ongoing guidance to local governments and partners as they work on sea level rise adaptation. This may include such activities as updates to best available science, updates to this Guidance document, development of more specific guidance on particularly challenging issues, hosting a series of trainings and workshops, and meeting on a more informal basis with interested parties.
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Planning	"We acknowledge that the Guidance Document expands on provisions in the Coastal Act on avoiding significant coastal hazard risks (reflected in Principles 4, 5, and 8). Section 30253 of the Coastal Act reflects sound planning practices of minimizing risks to life and property in hazardous areas. And, while not specifically called for by Coastal Act Sections 30253 (or Sections 30235; 30001, 30001.5), it is also a sound planning practice to avoid areas with high geologic, flood, and fire hazards. However, if sea-level rise projections hold true, many coastal urbanized areas that will be subject to inundation. Using the "best available science on sea-level rise," as ascribed by the Page 2 of 4 Guidance Document, over 4000 properties could be subject to flooding in Newport Beach on the Balboa Peninsula, Balboa Island, and West Newport. This is not a simple matter of siting development to avoid a hazardous area. Entire communities will be at risk and avoidance is not an option. Under such scenarios, the interpreted Coastal Act's emphasis against protective devices will have to be reconsidered. Clearly, a more comprehensive approach is needed to address the wide range of coastal settings in the state. A differentiation between developed, urbanized areas and undeveloped, rural areas would be a good place to start."	Chapter 7 (Adaptation Strategies) lists a wide array of adaptation strategies, including hard structures for existing development, that may or may not be applicable to certain locales. It is expected that the strategies will be applied on a case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Policy and Legal analysis	"Similarly, Principle 10's call for "the least environmentally damaging feasible alternatives and minimize hard shoreline protection" is appropriate. However, "feasible" needs to be emphasized when determining the least environmentally damaging shoreline protection alternative. The least environmentally damaging alternative could have minimal environmental impacts, but the costs associated with it would make that shoreline protection project infeasible. This is particularly true for the repair and maintenance of existing shoreline protective devices."	Feasibility is defined in the Coastal Act, and the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. The definition of feasible has also been added to the Guidance glossary.
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Planning	"The provision for protection of public beach and recreational (Principle 9) properly addresses publically-maintained public access facilities. However, there is no guidance for the numerous public access facilities where a property owner, community association, corporation, or private organization has agreed to assume responsibility for maintenance. Additional guidance is needed for these situations and for the protection of the private developments that make these public access facilities possible."	Individual projects will continue to be reviewed on a case-by-case basis. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Policy and Legal analysis	"Above all, the City is concerned that the Guidance Document will become a de facto regulatory document and mandated for implementation by local agencies as part of new or amended local coastal programs. Case in point, although the Guidance Document states that it is not a regulatory document, the Adaption Measures (Site Development Standards, Mitigation, Shoreline Management and Protection programs etc.) appear poised to become the threshold of review for new and amended LCPs under the guise of minimizing hazard risks. If so, the Guidance Document's recommendations for addressing sea-level rise will be regulatory and mandated for implementation by local agencies as part of new or amended LCPs."	In the Executive Summary and Introduction, the document states that this material is guidance, not regulations. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. LCPs will continue to be reviewed on a case by case basis, and it is expected that adaptation strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Policy and Legal analysis	"Of critical concern is the Guidance Document's failure to address how sea-level rise may involve private property rights and takings issues in specific cases. (Guidance Document, Page 20). It is not the issue of sea-level rise that gives rise to a takings claim, rather, it is mandatory imposition of strategies ranging from protection, accommodation, and retreat to land use decisions that may result in the taking of private property. To the extent that the Coastal Commission will rely on local agencies to implement the recommendations of the Guidance Document, we respectfully request that the Commission clarify its intention to guide development based on existing available science as opposed to setting standards by which hazard minimization is addressed. Therefore, we respectfully request that the Guidance Document be revised to confirm that it is not a regulatory document, and will not be implemented as such."	As stated in the Executive Summary and Introduction, this material is guidance not regulations. The Coastal Act and certified LCPs remain the standard of review, and individual CDPs will continue to be reviewed on a case-by-case and location-specific basis. Chapter 7 presents a wide array of adaptation strategies that will not be applicable in all situations but should instead be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. A chapter on the legal context of adaptation planning has been added to the Guidance.
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Planning	"With such an unequivocal commitment, the Coastal Commission would provide coastal cities with sufficient flexibility to implement the recommendations set forth in the Guidance Document where appropriate and based on regional and site-specific circumstances. For instance, the Guidance Document provides an approach for addressing sea-level rise that may only be appropriate in areas that have not been highly urbanized. This is especially the case where the Guidance Document provides good suggestions to promote a comprehensive assessment and development of policies for hazard avoidance mitigation by developing shoreline management plans and beach nourishment plans. Clearly, the Guidance Document's encouragement to perform adaptive planning at the regional level and to establish a transfer of development credits program are helpful suggestions for areas that have not been urbanized. However, in highly urbanized areas, coastal resources can be very limited and options for managed retreat may not exist."	Chapter 7 (Adaptation Strategies) lists a wide array of adaptation strategies that may or may not be applicable to certain locales. It is expected that the strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.

Name/ Affiliation	Key Topic	Comment	Response
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Adaptation	"the Guidance Document should clarify its intent as distinguishing development within, and adjacent to, harbors and the open ocean. The Guidance Document presents some ambiguities for the protection of harbors from potential flooding due to sea level rise...harbor flood defenses include jetties, seawalls, groins, tide gates, storm water pump systems, groundwater dewatering systems, and elevated finished floor elevations...these harbor flood defenses are only effective when working together...[they] act as a unit to protect residential, commercial and industrial properties and facilities in the coastal zone including boat yards, fuel stations, marine supply facilities, recreational facilities, tourist-serving facilities, houses, hotels, and restaurants, [they] allow for commercial and recreational boating and fishing activities, as well as safe beach access for residents and visitors... [they] allow all property owners to participate in federal flood insurance programs. We believe that the Guidance Document should be revised to reflect that several items in the Guidance Document would not be applicable in urbanized areas or to the maintenance, replacement or protection measures of property and facilities in, around and adjacent to a harbor's flood protection facilities."	Language has been added to Chapter 7 (Adaptation Strategies) clarifying that the list of adaptation strategies should be regarded as options, and that not all strategies will be applicable in all situations. It is expected that the strategies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Planning	"Principle 12 correctly calls for addressing sea-level rise impacts in a regional context. However, there is a missed opportunity here to call for collaboration and cooperation between local agencies in addressing sea-level rise on a regional basis. One city's efforts to address sea-level rise would be meaningless if there is no coordination with neighboring cities. Therefore, there is an opportunity here for the Coastal Commission to facilitate not only vertical cooperation (State to City), but also horizontal cooperation (City to City)."	Language has been added to the Introduction and to Chapter 5 (Addressing SLR in LCPs) encouraging regional coordination when appropriate. Sections on sharing information and leveraging resources have also been added to Chapter 6 (Addressing SLR in CDPs) and references coordinating with other agencies and planning efforts. The Commission will work to help support and coordinate such collaborative efforts.

Name/ Affiliation	Key Topic	Comment	Response
Kimberly Brandt, Director, City of Newport Beach Community Development Dept.	Planning	"The vision statement in your newly-adopted strategic plan calls for a California Coastal Commission that 'works collaboratively local governments, other agencies, and an engaged and knowledgeable public.' Rather than impose guidance from the top down, the Guidance Document provides a perfect opportunity for regional coordination among local governments and stakeholders (Principle 15) that will continue to have the ultimate responsibility for addressing sea-level rise. As this is a long-range planning document, there is ample time for Commission staff to meet directly with representatives of local governments and collaborate on a document that will provide practical guidance on addressing the consequences of sea-level rise. The City of Newport Beach is willing to take the lead in forming a local government working group that will sit down with Commission staff to complete the Guidance Document."	Thank you for your suggestion. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Commission staff intends to conduct trainings and workshops to facilitate the use of this Guidance document, and the Guidance encourages creative working relationships to make sea level rise planning efficient and effective.
David Behar, Climate Program Director, SFPUC	Best Available Science	"The Guidance inappropriately relies on some of the science conclusions from the NRC report while ignoring others: <i>[significant detail on reasoning for this belief]</i> ...Recommendation: The projections from the NRC Report should be added to the DG in all places where SLR figures from the Report are cited in the DG. The relative meaning of the projections and the ranges should be presented in the DG to help achieve clarity and transparency."	Description of the NRC "projections" versus the full range has been added to Appendix A and is referenced in Chapter 3.
David Behar, Climate Program Director, SFPUC	Best Available Science	"The Draft Guidance rigidly relies on a single report while ignoring all other credible science. <i>[significant detail on reasoning for this belief]</i> ...Recommendation: The Draft Guidance should be revised wherever best available science is discussed to provide greater flexibility to local governments to use the latest peer-reviewed science and broad scientific agreement as to likelihood and the expected scope and timing of sea level rise. The conclusions of both the IPCC and the NCA should be presented in context in the Guidance alongside the NRC Report conclusions."	Chapter 3 (Sea Level Rise Science) and Appendix A describe a number of studies related to global, national, and local sea level rise. As stated in the Guidance, and in line with the Ocean Protection Council's recommendations, the NRC report is considered the best-available science on sea level rise in California, and the Commission recommends using the projection ranges from this report. The Guidance also states that planners can use equivalent resources provided that they are peer-reviewed, widely accepted within the scientific community, and locally relevant. The Commission will also update and disseminate best-available science as necessary.
David Behar, Climate Program Director, SFPUC	Best Available Science	"Vertical land motion guidance fails to consider local conditions by requiring a one-size-fits-all set of assumptions for the area from Cape Mendocino to the Mexican border. <i>[significant detail on reasoning for this belief]</i> ... Recommendation: Sections of the DG that appear to discourage or prohibit local government from developing local vertical land motion estimates appropriate to their jurisdiction should be removed."	As stated in multiple places in the document, modifying the NRC projections for local vertical land motion is not necessary because, in most cases, doing so does not result in significant differences from the given regional projections. However, planners may do so provided that locally relevant data and information exists to support this work. Language has been added and/or revised to ensure clarity on this topic.

Name/ Affiliation	Key Topic	Comment	Response
David Behar, Climate Program Director, SFPUC	Planning	"The DG, as a result of the above, provides decision makers with an unnecessarily wide array of SLR effects, making the planning and permitting environment more difficult for both permittees and the Commission."	Thank you for your comment; it has been taken into consideration. Language has been added to Chapter 3 describing the rationale for using scenario-based planning to address SLR projection ranges. Additionally, language has been added to emphasize the need for continued funding and technical support for local jurisdictions.
County of San Mateo, Board of Supervisors	Policy and Legal analysis	"How does the Commission recommend that local governments address the changes in Coastal Development Permit jurisdiction that will accompany changes to the location of Mean High Tide Line? What information should applicants provide in this regard, and how should that information be used?"	The importance of reassessing the public trust boundary is referenced in Chapter 9 (Next Steps). Additionally, a chapter on the legal context of adaptation planning, which includes reference to changing public trust boundaries, has been added to the document.
County of San Mateo, Board of Supervisors	Adaptation	"Proposals to develop vacant bluff top lots that are directly adjacent to developed lots with existing shoreline protection devices often raise difficult issues for local governments and the Commission. In some such instances, the Commission has endorsed the development of subregional solutions that allow gaps to be filled. The absence of this strategy from the guidance document is inconsistent with the Commission support for planning efforts that are currently underway."	Clustering of development is included in Chapter 7 (Adaptation Strategies).
County of San Mateo, Board of Supervisors	Policy and Legal analysis	"Local governments and the Commission are also faced with difficult decisions regarding proposals to install shoreline protection devices in areas where no such devices currently exist, in order to protect structures that may have reached their theoretic end of life (e.g., Martins Beach). How does the Commission recommend that local governments apply Coastal Act Section 30235, which states that seawalls shall be permitted when required to protect existing structures, to the development of local policies and regulations that address these situations?"	The use of "no future seawall" conditions for new development and other related strategies are presented in Chapter 7 (Adaptation Strategies). The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
County of San Mateo, Board of Supervisors	Planning	"The draft guidance document suggests that local governments analyze and address the risks and constraints to an area's water and sewer facilities, transportation systems, and other critical infrastructure. In most cases, the special districts and transportation agencies that provide these services are best equipped to address these issues. In addition, existing Commission issued permits and public works plans establish the Commission as the decision-making authority regarding many of the actions that special districts or transportation agencies may need to take in response to sea-level rise. The guidance document should acknowledge the important role that the Commission, special districts, and state and regional transportation agencies play in providing local governments with the information needed to update LCPs, and identify the ways in which this can be accomplished."	Sections on sharing information and leveraging resources have been added to Chapter 5 (Addressing SLR in LCPs) and references coordinating with other agencies and planning efforts. The Commission will work to help support and coordinate such collaborative efforts.
County of San Mateo, Board of Supervisors	Policy and Legal analysis	"The draft guidance states that it "does not address how sea-level rise may involve private property rights and takings issues in specific cases" (page 20). Yet it suggests that local governments institute policies that prohibit landowners from making use of lands that may become habitat, wetlands, or hazardous in the future. Given that all local governments will need to justify such exactions as being connected and proportional to a project's impact, the Commission staff is in the perfect position to provide statewide guidance on this important and difficult issue."	A chapter on the legal context of adaptation planning has been added to the Guidance.
County of San Mateo, Board of Supervisors	Monitoring, Research Needs, and Next Steps	"While the County concurs with the overall framework for conducting impact assessments presented by the guidance, some of the specific components require further research and development. As recognized by Section VI of the document, further work is needed to: understand impacts to coastal access and recreation; assess the vulnerability of wetlands and sensitive habitats; establish a methodology for estimating changes in erosion rates; and, quantify the potential effects on coastal aquifers...Unfortunately, the methodologies for assessing the particular impacts noted above are not specific or developed enough to enable accurate or dependable analyses."	This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
County of San Mateo, Board of Supervisors	Best Available Science	"The draft guidance document states that local government should assess best available science on sea level rise every five years and update their LCPs as needed, but does not acknowledge the importance of regular updates to the Commission's guidance. Better information from the Commission regarding the way in which it expects local governments to analyze the above impacts is needed before such analyses become an information requirement, or relied upon for important land use decisions."	As stated in the Guidance, the Commission intends to update best available science as necessary, and will work closely with local governments and other partners to ensure this process is clear. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. Additionally, Commission staff intends to conduct trainings and workshops to facilitate the use of this Guidance document.
County of San Mateo, Board of Supervisors	Planning	"The guidance is unclear regarding the concepts of project lifespans and planning horizons. What is the Commission's recommended "life of structure" that local governments should use to determine setbacks for residential, commercial, industrial, and public works buildings? How does the typical 20-year plan horizon noted on page 122 relate to guidance suggesting that anticipated sea levels in 2100 be considered?"	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) to provide more clarity. The Guidance recommends considering the sea level rise over the long term, including up to 2100 or beyond, rather than focusing only on the general 20 year planning horizon that is typical of some planning documents, because many development projects that are planned today will still be in existence in the year 2100.
County of San Mateo, Board of Supervisors	Adaptation	"Given the challenges and complexities of planned retreat and transfer of development rights programs, guidance that calls on local government to consider developing such programs should be accompanied by references to successful examples, and/or suggestions about how to establish and administer such programs."	Appendix C (Resources for Addressing SLR) references a number of existing resources for adaptation planning. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work, including additional guidance on specific adaptation measures, will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
County of San Mateo, Board of Supervisors	Adaptation	"Suggested policies that call for easements and acquisitions are of questionable financial feasibility and raise issues regarding long-term management, such as which agencies or organizations will be responsible for easement enforcement and property maintenance. The establishment of statewide or regional programs that would provide financial and technical assistance needed by property owners to take necessary actions with their land should be given equal consideration."	Language has been added emphasizing the need for continued funding and technical support for local government partners as well as the importance of regional coordination, sharing information, and leveraging existing resources. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships.

Name/ Affiliation	Key Topic	Comment	Response
County of San Mateo, Board of Supervisors	Adaptation	"Similarly, suggestions that local governments establish policies calling for the development of various types of management plans do not acknowledge the difficulties of financing and implementing such plans, particularly in areas with diverse ownership interests. Who should be responsible for preparing and carrying out these plans, and what can be done at the statewide level to provide the necessary support?"	The adaptation strategies presented in Chapter 7 will not be applicable in all situations, but instead should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. Language has been added to the Guidance regarding the need for continued and additional regional coordination, funding, and information sharing. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation
County of San Mateo, Board of Supervisors	Planning	"One of the most significant problems local governments encounter during the LCP amendment process is satisfying the Commission's requests for additional reports, analyses, and information beyond that which is contained in the local administrative record. While the guidelines may help address this issue by identifying the information expected by the Commission, the extensive resources required to compile this information should be considered. The Commission and other state agencies could help address this challenge by funding or conducting sea level rise impact assessments at a regional level, as well as by providing more active participation in the local review process. The Commission should take a leadership role in this regard, rather than placing this responsibility on local governments, as stated by Principle 16 on p. 27."	Thank you for your comment. There are many efforts underway throughout the state to conduct regional sea level rise assessments. Appendix C (Resources for Addressing SLR) references a number of existing regional vulnerability assessments. Please refer to the Introduction and Appendix E for information on several grant programs that are available at this time to help support sea level rise planning efforts. Also, language has been added to the document emphasizing the need for continued funding and technical support for local governments. The Commission recognizes the challenges that exist, and will work to help support and coordinate local and regional efforts to plan for sea level rise. In addition, the Coastal Commission increased staffing specifically to work on LCPs in the planning and local review stage.
County of San Mateo, Board of Supervisors	Planning	"In addition, amendments that are initiated for a specific purpose often get held up at the filing stage due to remotely tangential issues, and associated requests for additional information. The guidelines should make it clear that the recommended information and analyses will only be required when the specific changes proposed by an amendment raise issues related to sea level rise."	The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone, and LCP updates and other projects will be evaluated and reviewed on a case-by-case basis. Commission staff plans to work closely with local government partners in implementing this Guidance, and the importance of early and continued collaboration with Commission staff during LCP and CDP processes is noted throughout the document.

Name/ Affiliation	Key Topic	Comment	Response
County of San Mateo, Board of Supervisors	Planning	"Commission participation in the local decision making process is also needed to facilitate the resolution of policy conflicts in an acceptable manner. The impacts of sea-level rise are bound to require difficult decisions about the relative importance of one type of coastal resource over another. The earlier the Commission can gain an understanding of local views on such matters and provide input on these decisions, the less it will need to suggest modifications that may run contrary to the thoughtful compromises reached during local review."	Language has been added to the document noting that a number of trade-offs and competing interests exist that relate to sea level rise planning efforts. The Commission will continue to support local efforts to address sea level rise impacts, and the importance of early and continuous coordination with Commission staff during the LCP and CDP processes are noted throughout the document. The Commission recognizes this need and has increased staffing to help with early coordination on LCPs.
County of San Mateo, Board of Supervisors	Planning	"The identified need to update plans on a regular basis to account for new information and changed circumstances necessitates a much more efficient and predictable certification process. With regard to LCP updates that address sea-level rise, the Commission can make the amendment process more efficient by: conducting the development of sea-level rise impact assessments at the regional level, thereby eliminating the need for each jurisdiction to undertake costly and redundant analyses, and ensuring that the information adequately addresses Commission expectations; providing technical and financial support for the development and implementation of the specific resource management plans that should accompany such updates; and, actively and consistently participating in all stages of the local review process."	Language has been added emphasizing the need for continued funding and technical support for local government partners as well as the importance of regional coordination, sharing information, and leveraging existing resources. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
County of Marin, Community Development Agency	Planning	"California has established forward-looking legislation to combat the rise of greenhouse gas emissions (GHGs) with AB 32 and SB 375, as well as the recent advent of the cap and trade system. We are not aware of a similar State Legislative statement of goals, priorities, and programs on sea level rise (SLR) adaptation strategies. Similarly, the California Coastal Act was enacted before climate change was widely regarded as a serious threat, and therefore was not written to address the changes our coastline will undergo this century. This new context gives the Commission a unique opportunity in responding to sea level rise. It has become increasingly clear through our own recent experience in addressing sea level rise that the old command and control approach will not by itself work effectively when the physical environment is changing beneath our feet. Coping with sea level rise will take the sustained, systematic collaboration, coordination, and creativity of government at all levels, together with the private sector. The Commission is well positioned to bring this about. We view the Commission as having a potential leadership role in providing information, support and connections that can maximize the effectiveness of all those working to respond to sea level rise along the coast. For many years, much of the work both our agencies have been engaged in has focused on enacting and enforcing regulations. Sea level rise challenges us to broaden our perspective toward planning and facilitation."	Thank you for your comment. The Coastal Commission recognizes that, given the scale of the challenges posed by climate change, solutions will need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global). Land use planning, the focus of this Guidance, is one of many strategies that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related work and therefore provides a starting point for planning on the project- or topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Brian Crawford, Director, County of Marin Community Development Agency	Best Available Science	"The Draft establishes the principle of using science to guide decisions, and identifies several modeling programs for mapping sea level rise, including the "Our Coast Our Future" model Marin County is currently using in our local sea level rise planning. It would be helpful for the State to officially endorse these as the models that should be used. Providing the State's official recognition of a standard set of models will avoid inconsistent, piecemeal analysis on a project-by-project basis. Sea level rise maps should be published as official maps by the Commission to avoid unnecessary controversy. It would be helpful to have this issue addressed before the Draft becomes an adopted guidance document. They should also be reevaluated by the Commission periodically to refine the maps based on the latest scientific research and published in a manner that is user friendly."	The use of modelling programs to identify and analyze sea level rise impacts and vulnerabilities is an evolving science. The Guidance identifies a number of models and tools that currently exist and includes a description of what each tool does and for what region(s) the tool is applicable. Many tools are necessarily specific to certain regions, and as such should be utilized for planning on a case-by-case basis. The Commission will continue to support and collaborate as possible on the development and use of various sea level rise modelling tools.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Planning	"Draft Principle #D.15 calls for maximizing agency coordination, planning research and monitoring. It will take persistent and focused leadership by the Commission to make these objectives a reality. While Marin County and other local governments have worked hard to establish collaborations among many federal, state and local agencies, as well as academic and private institutions, the Draft should address how the Commission could more effectively mobilize others, especially state agencies, to work with local governments in adaptation planning. It would be very helpful to local jurisdictions, for example, if both Caltrans and the California Department of Fish and Wildlife (CDFW) could be actively engaged in the local SLR assessment and strategy development process. Since Highway 1 provides the primary means of access for many small coastal towns, it is very important for local jurisdictions to be able to understand and influence Caltrans' plans for the future. Similarly, collaboration with CDFW, as well as federal wildlife agencies, would be useful in identifying potential impacts to wetlands, streams and other habitats, as well as options for mitigation and migration of these resources....The State Lands Commission may also have a critical role in some of the legal questions noted below, especially with regard to property ownership and the public trust with changes in the mean high tide line."	The Introduction includes a section on state efforts to address climate change and sea level rise and acknowledges the Coastal Commission's ongoing efforts to coordinate with other state agencies on future projects, and Chapter 9 (Next Steps) encourages ongoing coordination with public agency partners to assess and analyze coastal zone vulnerabilities. Language has been added to the Guidance identifying both state agencies involved in sea level rise planning and other planning documents that often address sea level rise. Staff considered this issue during the revisions to the Guidance, and will continue to coordinate with other state agencies on these challenges.
Brian Crawford, Director, County of Marin Community Development Agency	Policy and Legal analysis	"The Draft refers to private property and "takings" concerns as a matter of "specific cases" (p. 20). The fundamental approach and effectiveness of many SLR responses are affected by legal issues, and the Commission's legal counsel should provide guidance on these. It would be helpful for the Commission to explain the case law or legal basis that support limiting development in permits issued in the present day based upon presumed "future locations" of access ways (p. 73) or coastal habitats, natural landforms (p. 74) or scenic vantage points (p. 76)."	A chapter on the legal context of adaptation planning has been added to the Guidance.
Brian Crawford, Director, County of Marin Community Development Agency	Policy and Legal analysis	"Another potential problem relates to smaller projects and "redevelopment restrictions" (p. 51). It is unclear if this policy means that a property owner remodeling a portion of their home or constructing an addition would be subject to all the requirements of the Draft, including the preparation of expensive studies and moving their home inland. The Draft does not address if and how this can be legally justified. While we understand the Draft is essentially a policy guide, it would be helpful to local jurisdictions being asked to implement the Draft to have a supporting legal basis regarding a reasonable relationship between remodeling and relocating an existing structure and the effects of sea level rise on coastal resources."	A chapter on the legal context of adaptation planning has been added to the Guidance. Definitions of "redevelopment" and "renovation" and any related standards for these are often found in an LCP. Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"...they do not adequately address adaptation and protection requirements for existing developed areas. In particular, Coastal Act Section 30235 explicitly permits protection of existing development"	Chapter 7 provides a broad array of adaptation strategies, including a section of strategies related to existing development. These strategies should be implemented on a case-by-case basis in a way that fulfills the requirements do the Coastal Act and accounts for local conditions.
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"The Draft should address what may become a common situation: a community working to implement adaptation measures to protect all or a substantial portion of its area, but through a phased or long-term deployment period (by way of example, 20 to 30 years) based on sea level rise projections. The Draft should be clarified as to whether all of the policies recommended on a parcel-by-parcel basis can and should be applied as a comprehensive area-wide solution."	Additional language has been added to Chapter 7 (Adaptation Strategies) noting in what cases strategies could be implemented through a CDP or in an LCP, as well as referencing the idea of using a suite of adaptation strategies over time to account for changing conditions.
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"The proposed SLR policy guidance contains many restrictions on shoreline protection structures intended to slow the erosion of bluffs or to prevent the inundation of shoreline properties. These policies should be clarified as to whether their intent is to prevent established communities from protecting themselves."	The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. Chapter 7 provides a broad array of adaptation strategies that may not be applicable in all situations. As stated in the document, these strategies should be implemented on a case-by-case and location-specific basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"The Draft does not fully explain how the proposed concept of limiting new development to an "expected life" determined by projected sea level rise would work."	Some revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide additional clarity. However, this is an area of ongoing policy development. In general, projects will continue to be evaluated and reviewed on a case-by-case basis that reflects local factors. The Commission recognizes that more detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Policy and Legal analysis	"It would be helpful to know the specific criteria the Commission has in mind to determine whether a site is "too constrained" by sea level rise. The National Research Council's (NRC) "low and high projections" have a substantial range, especially for the year 2100. The NRC projections do not assign a specific sea level to a specific year. Would the Commission impose restrictions on development based on the low end, the high end, the mean, or some other level of sea level rise projected to occur within each NRC timeframe? For example, what life would be "allowed" for a development that would not be affected until sea level rose 100 cm and what would the consequence be to such a homeowner at that point?"	Some revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide additional clarity. However, this is an area of ongoing policy development. In general, projects will continue to be evaluated and reviewed on a case-by-case basis that reflects local factors. The Commission recognizes that more detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"What does "modifying the expected life of the development to a shorter period" (p. 68) mean in practice? Does it mean requiring that a development be abandoned or removed after a set period of time? Local governments generally do not have the practice or experience of placing a termination date on the approval of a home, business or other permanent structure as a permit condition. The Draft seems to rely on this approach as a management tool without providing guidance as to how it might be implemented. As currently stated under "Expected Outcomes" (p. 68), "reliance on additional protection measures" (such as raising the home) would not appear to be permitted. Would there be some kind of condition that would require the use to be removed after a specified number of years from the original permit date, or when sea level reached a point where the structure would be impacted? Or would the Commission simply require review and renewal of the permit after a given number of years, as it has recently begun to do with shoreline protection permits? While we recognize the "expected life" issue is particularly difficult to address from a regulatory standpoint, other options should be considered before the Draft is adopted. It may be worthwhile to consider if and how a conventional prescriptive approach could be improved by adaptive management techniques that recognize both the uncertainty of long range projections and the phasing or sequencing of adaptation responses over time."	Clarifications have been made to the sections on project life and additional detail has been added related to how to use modifications to project life as a management tool. Additionally, the sentence referenced on page 68 of the draft document has been revised to state that projects should not rely on the future use of <i>shoreline protective devices</i> . The Commission further recognizes that this is an area of continuing and emerging policy development that will require continued coordination.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Best Available Science	"The Draft should recognize that most local governments do not have ongoing access to expertise in global climatology, ocean dynamics, or biological field science. Yet at several places (pp. 30, 39, 120), the Draft calls for local governments, applicants, and staff to modify the NRC projections to account for surge, increased water levels from atmospheric forcing due to an El Nino Southern Oscillation (ENSO) or Pacific Decadal Oscillation (PDO), among other variables. It also calls for sediment supply, salt water intrusion and littoral cell studies. Many local governments or most private consulting firms hired by applicants are not equipped to perform this kind of scientific analysis. Moreover, these "basin-wide phenomena," as referred to in the Draft, apply to larger regions than the local areas. It is Marin County's intent to work with other agencies and academic institutions to develop an efficient, expert and collaborative approach to these issues, but it would be extremely helpful for the Commission to join in this effort and to seek support from the Natural Resources Agency, Ocean Protection Council/Ocean Science Trust, FEMA and other appropriate agencies for such work."	The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. Language has been added emphasizing the need for continued funding and technical support for local governments and others, and notes the importance of leveraging resources and collaborating with other agencies. Appendix C provides a number of resources and tools that may be helpful for efforts to plan for sea level rise.
Brian Crawford, Director, County of Marin Community Development Agency	Best Available Science	"Also, since the NRC projections are fundamental to the Draft, it would be helpful if Table 1 reproduced the NRC table as originally presented showing the individual projections, low, mean, and high."	In line with the Ocean Protection Council's recommendations, the Coastal Commission recommends considering the full range of the NRC projections. However, detail on the difference between the full range and the "projections" from the NRC report has been added to Appendix A and is referenced in Chapter 3 (Sea Level Rise Science).
Brian Crawford, Director, County of Marin Community Development Agency	Funding	"SLR and Adaptation Monitoring: The Draft calls upon local governments to evaluate sea level rise projections every five years (p. 63). We hope the Commission takes a strong advocacy position for ongoing mechanisms and funding to support monitoring efficiently and consistently on a statewide basis, coordinating the efforts of local, state and federal agencies, academic institutions and other professional organizations."	Language was added to the Guidance regarding the need for regional coordination, funding, and information sharing. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Monitoring, Research Needs, and Next Steps	"Similarly, a statewide strategy should be developed to monitor the effectiveness of adaptation measures put in place over time. One approach might be to develop simple, cost-effective protocols that make it feasible for local governments to carry out such monitoring. Alternatively, a single monitoring group could be created to consistently carry out monitoring along the coast, perhaps selectively monitoring a sampling of similar installations."	The need for better monitoring systems, including tracking the effectiveness of adaptation strategies, is noted in Chapter 9 (Next Steps). The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level.
Brian Crawford, Director, County of Marin Community Development Agency	Monitoring, Research Needs, and Next Steps	"Coastal Habitat Monitoring: The Draft states 'as part of the LCP, consider establishing a monitoring protocol and requirements for evaluating sea level rise impacts to coastal habitats over time' (p. 58). This appears to suggest such monitoring be solely assigned to local governments. A statewide monitoring strategy engaging the expertise and capabilities of relevant state and federal agencies should be developed to assure consistency and efficiency."	Sections emphasizing the importance of regional coordination, sharing of information, and leveraging existing resources have been added to Chapter 5 (Addressing SLR in LCPs). Resources on habitat monitoring and other topics can be found in Appendix C (Resources for Addressing SLR). This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Commission will continue to support these efforts.
Brian Crawford, Director, County of Marin Community Development Agency	Policy and Legal analysis	"Resolve Conflicts with FEMA Requirements: The Draft addresses in several places the potential conflict regarding elevating structures according to FEMA requirements (e.g., p. 53 vs. pp. 62 and 78)...it is difficult to know if the Commission is encouraging local agencies to prohibit elevating structures in response to sea level rise or allowing it as the least preferred option. Providing greater clarity in this area of the Draft would be helpful to avoid putting local governments and applicants between FEMA's "rock" and what may be the "hard place" of the Draft."	The adaptation policies in Chapter 7 should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act, accounts for local conditions, and is in line with other applicable regulations and building codes. Some discussion on the relationship between Coastal Act and FEMA policies has been added, but more detailed work and continued coordination with other local, state, and federal agencies will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Policy and Legal analysis	"The Draft contains a number of provisions suggesting a variety of technical studies be required for both LCP updates as well as projects. While larger-scale projects and major LCP updates may be able to afford the cost of providing the breadth of studies listed in the Draft, smaller-scale projects that are typical for Marin would likely not. The combined cost of coastal development application fees and technical studies may be prohibitively excessive for small projects, such as single-family remodels or minor additions to agricultural operations. This issue is of particular concern in Marin due to the already high cost of permit fees and application submittals for coastal development permits that have likely contributed to a rise in unpermitted work. We suggest the Draft provide more refined guidance regarding if and how small-scale projects that do not pose serious sea level rise impacts may be considered and possibly allowed without the need for expensive technical studies."	Language has been added emphasizing the idea of leveraging resources when conducting vulnerability assessments and hazards analyses, and an example of this may include using the work done for the LCP development/update process when performing analyses for individual CDPs. However, in many cases, it may be necessary to conduct more site specific analyses for a CDP. For this reason, CDPs will continue to be reviewed on a case-by-case basis. The Coastal Commission will continue to coordinate with and support local governments and project applicants.
Brian Crawford, Director, County of Marin Community Development Agency	Planning	"The Draft does not appear to provide guidance on how to apply SLR projections in situations of combined fluvial-tidal flooding. We have identified this issue in our SLR planning in Marin, and it may be an issue elsewhere. In particular, there will likely need to be coordination with FEMA on this issue."	The need for modeling of fluvial dynamics and associated sea level rise impacts has been added to Chapter 9 (Next Steps). The Commission will continue to coordinate with other agencies and organizations to support continued efforts to address sea level rise.

Name/ Affiliation	Key Topic	Comment	Response
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"The Draft encourages TDCs, but please clarify if the text is correct: 'Establish a transfer of development credits program: Consider creating a transfer of development credits program (TDC) or lot retirement program where new development located in hazardous areas must pay a fee or purchase development rights of properties identified by the land use plan to be in high hazard sea-level rise zones or key conservation areas for wetland migration (p. 54)'. Does the above statement mean that new development would be allowed in a hazardous area if it paid a fee or purchased TDCs from a property in (another) high hazard zone or conservation area? Does this apply to both existing and future hazardous areas? The following provision acknowledges that certain agricultural lands should be encouraged to convert to marsh. We also suggest the Draft address the possibility of also allowing areas zoned for non-prime agriculture or large lots to be used as TDC receiver sites to facilitate moving existing development out of sea level rise areas so those areas in turn could revert to wetlands. We pose this question in the context of Marin's current LCP that supports the use of transfer of development rights (TDR) as a means of protecting agricultural lands (the County's C-APZ zone also allows TDR within coastal agricultural land). Establish incentives for conservation easements: Encourage conservation easements in areas vulnerable to sea-level rise. Easements could allow conversion of agricultural/and to marsh where appropriate (p. 59)."	Language related to TDCs has been checked for accuracy. The intent of a TDC is as described in the comment, and could apply to both current and future hazard areas. The adaptation strategies in Chapter 7 should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. For example, if a goal is to protect wetland migration, there may be opportunities to use TDC programs to encourage protection of areas for wetland migration.
Brian Crawford, Director, County of Marin Community Development Agency	Adaptation	"In addition to the other "living shorelines" mentioned, support for the art and science of restoring or creating dunes (engineering requirements, resilience, efficacy, maintenance needs, costs, monitoring protocols, etc.) should be added to the list (p. 91). This support should include critical analysis of the successes and failures of past projects such as beach nourishment, developing effective ways to transfer the technology of current best practices, and making strategic investments in pilot projects that will provide critical information in time to respond to rising seas."	Chapter 7 (Adaptation Strategies) presents a wide array of adaptation options, including dune restoration and management.
Brian Crawford, Director, County of Marin Community Development Agency	General	"The text of the Draft tends to be very repetitive. For example, the various analysis "Steps" are repeated several times, and Tables 1, 2, 3, 5 and 6 all basically repeat one another. We understand that the two parts are intended to address planning and permitting separately, but the Draft would benefit from an organizational review to reduce repetition and thus the document length, and therefore make it more likely to be read and used by local agencies."	The Guidance is written for a broad audience with varied levels and areas of expertise. Additionally, it is meant to be comprehensive and serve multiple purposes, and many users will concentrate on specific sections. As such, the Guidance is somewhat repetitive to ensure that sections can be used as stand-alone resources. Staff has also made edits to the document to reduce unnecessary repetition.

Name/ Affiliation	Key Topic	Comment	Response
Michael McCarthy, Interim City Manager, City of Monterey	Policy and Legal analysis	"The basic question is does the City and individuals have the right to protect property with hard shoreline protection devices if the soft approaches fail to work. There is a specific property in Cannery Row where the developer is proposing to keep the existing, historic building and adaptively reuse the historic cannery. It is unclear what the Coastal Commission's approach will be on this property and others such as the City's wharves, sewer line, sewer lift stations, roadways, etc. It will be particularly challenging to move this type of infrastructure. The question revolves around principle 10 that states, 'In some situations, protection of existing structures may include the use of traditional hard shoreline protection devices (as permitted under the Coastal Act in certain conditions).' Other principles state that the property owners will be required to pay a sand mitigation fee if these structures are proposed. We request that the document be amended to provide more guidance in this area other than 'as permitted under the Coastal Act in certain conditions.'"	Chapter 3 of the Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. Additional language has been added to Chapter 7 (Adaptation Strategies) regarding Chapter 3 policies of the Coastal Act regarding shoreline protection. The Coastal Act does allow hard shoreline protective devices to protect existing development when other measures would not be effective and when appropriate mitigation is provided. Determination of the appropriate mitigation will depend on the site-specific impacts of the project. The Coastal Commission recognizes that for particularly challenging issue areas, additional targeted efforts will be needed. Local Coastal Programs or Public Works Plans can be the appropriate context for evaluating how to address unusual situations that are beyond the scope of a statewide guidance document.
Surfrider Foundation Legal Dept.	Policy and Legal analysis	"The current Draft Guidance does not go far enough to ensure lasting protection of coastal habitats and public access. The Draft Guidance indicates that 'measures to protect existing structures should limit the use of coastal protection structures, such as seawalls, and that the use of such protection structures should be time limited 'for example to the lifetime of the structure.' In the current Draft Guidance, the Commission provides no guidelines on the lifetime of existing structures and states that if a Local Coastal Plan does not specify a shorter timeframe for new projects, 'a minimum of 75 to 100 years should be considered as the design life for primary residential and commercial structures.'"	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide clarity on this issue. However, this is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Commission will continue to support these efforts.
Surfrider Foundation Legal Dept.	Policy and Legal analysis	"As such, a 75 to 100 year time frame for new structures is likely too long to allow for a meaningful response to the dynamic changes California's coastline will experience as a result of sea level rise. Furthermore, the Coastal Commission's failure to provide guidance on the lifetime of existing structures exacerbates the risk that these structures will be permitted to persist at the expense of environmentally sensitive habitat areas and public access."	Revisions have been made to the sections on project life in Chapter 6 (Addressing SLR in CDPs) and Chapter 7 (Adaptation Strategies) to provide clarity on this issue. However, standards related to project life and shoreline protective structures are the subject of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Commission will continue to support these efforts.

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation Legal Dept.	Policy and Legal analysis	"The Draft Guidance does not go far enough to require reevaluation of coastal protection structures on a timeframe that is meaningful with respect to the projected impacts of sea level rise. Because of the dynamic nature of the changes that are expected, more frequent reevaluation of coastal protection structures and shorter development lifetimes for new construction are necessary if meaningful retreat that protects coastal habitats and public access is to be pursued."	Chapter 7 (Adaptation Strategies) presents a wide array of adaption options related to shorter development life and mitigating impacts of hard protection. However, the review of shoreline protective devices is an area of ongoing policy development. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.
Surfrider Foundation Legal Dept.	Adaptation	"While Surfrider applauds the Coastal Commission's efforts to obtain covenants that new development will not require seawalls, these covenants alone will not be sufficient. As the Capitola example demonstrates, the Coastal Commission is likely to be faced with increasing conflicts between section 30235 and section 30233's broad prohibition on armoring. The only way to address these conflicts and remain true to the Coastal Act's policies safeguarding environmentally sensitive habitat areas and public access is to recognize that existing structures have limited lifetimes and, where feasible, use forward planning mechanisms (such as Transfer of Development Rights systems, rolling easements, and moveable structure design approaches) to avoid de facto armoring of the coast by protecting structures in perpetuity and allowing existing and future development to become essentially permanent. Once the limited lifetime of these structures is both recognized and built into the forward planning process, meaningful sea level rise adaptation policies that protect public access and coastal habitats will be achievable if the Coastal Commission engages in a program of robust enforcement."	Chapter 7 provides a wide array of adaptation options, including proactive strategies to limit the use of hardened shorelines, to allow development with shorter lifetimes, to encourage managed retreat, and to limit development in hazardous areas. These strategies should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Surfrider Foundation Legal Dept.	Policy and Legal analysis	"In California, a de facto fortification process is already underway that risks making development along the coastline even more common and enduring in the face of eroding shorelines and coastal flooding. It is imperative that the Coastal Commission not rely on notice clauses alone and that it be prepared to enforce these clauses in the future to protect public access."	Chapter 7 provides a wide array of adaptation options, including proactive strategies to limit the use of hardened shorelines, to allow development with shorter lifetimes, to encourage managed retreat, and to limit development in hazardous areas. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation.

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation Legal Dept.	Adaptation	"The use of easements can facilitate coastal adaptation in two key ways. First, in combination with setback requirements, the Commission could require easements that ensure there is a buffer of open land between the shoreline and any new coastal development, meaning that the development itself will have a longer lifetime while being consistent with the Coastal Act's goals of promoting public habitat and coastal conservation. Second, the Commission could encourage the adoption of rolling easements—public access or conservation easements that are defined relative to the location of the shoreline and move landward with the natural action of erosion, storm events, and sea level rise—to implement a conservation and public access strategy that recognizes the dynamic nature of the ocean coastline."	Chapter 7 provides a wide array of adaptation options, including conservation easements. These strategies should be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions. A section on rolling easements has been added to Chapter 7.
Surfrider Foundation Legal Dept.	Policy and Legal analysis	"Surfrider encourages the Coastal Commission to look to its sister commission, BCDC, as an important example of how forward looking planning and permitting that accounts for sea level rise can be implemented...The new Bay Plan climate change policies require that a qualified engineer conduct a sea level rise risk assessment for any new project along the Bay shoreline. If the assessment determines that an area will be vulnerable to sea level rise, the only developments that the BCDC will approve in that area are repairs to existing facilities, small projects that do not increase risks to public safety, infill developments and those new developments that can demonstrate they are designed to be "resilient to a midcentury sea level rise projection." This requirement is significant because it means that sea level rise and the potential need for retreat are considered at the initial development stage not set aside to be dealt with in the future when the encroachment of rising seas becomes an imminent threat. Such planning reduces the risk that new structures will become essentially permanent in a manner that is inconsistent with public access and environmental protection. Surfrider encourages the Coastal Commission to adopt similar policies for California's ocean coast. As set forth below, such an approach could require a showing that new construction is resilient to future sea level rise projections and designed in a manner to facilitate retreat."	Thank you for your comment. Chapter 7 (Adaptation Strategies) presents a number of proactive strategies such as encouraging clustering development, limiting new development in vulnerable areas, updating design requirements to ensure development is resilient, and so on. However, this material is guidance for adaptation planning within the context of existing regulations in the Coastal Act rather than new regulations. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation, and the Coastal Commission will continue to coordinate with BCDC, and other state agencies and local governments to share information and support planning efforts.

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation Legal Dept.	Adaptation	<p>"Coastal Development Permits Should Require Engineering Plans for Retreat. We encourage the Coastal Commission to take a step further in its current Sea Level Rise Policy guidance and require retreat planning consistent with both the low and high sea level rise scenarios the current guidance recommends for evaluation as part of the CDP application — at the time that a CDP is issued. Given that sea level rise is likely to increase erosion rates along much of California's coast, many new structures receiving CDPs will become threatened by erosion during the structure's lifetime. Therefore, to make the commitment that a new structure will not require a seawall meaningful, the Coastal Commission should require that all permit applicants submit engineering plans explaining how the proposed structure can be removed in the event that erosion threatens the structure in the future. Required plans should build upon the assessment of the amount of erosion over a property's lifetime recommended by the current Draft Guidance. These plans should be drawn and signed by a professional engineer, explain how the structure will be removed (either in phases or all at once) when it becomes unsound due to erosion or impedes public access, and include specific triggers for when the retreat plan will be invoked. These retreat plans should be recorded into the deed as covenants alongside the applicant's waiver of his ability to seek a permit for a seawall in the future."</p>	<p>Chapter 7 provides a wide array of adaptation strategies including managed retreat and recommendations for limiting and/or removing seawalls. However, this material is guidance not regulations. The Coastal Act and the certified LCPs remain the standard of review for projects in the coastal zone, and adaptation policies will be implemented on a case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.</p>

Name/ Affiliation	Key Topic	Comment	Response
Surfrider Foundation Legal Dept.	Policy and Legal analysis	"The Commission Should Convene an Expert Panel to Provide Specific Guidance on the Consideration of Takings Issues in Planning for Sea Level Rise. The dynamic changes in the coastline that will be driven by sea level rise are thoroughly addressed by the Commission in the Draft Guidance. These changes will, in many cases, demand a strategy of retreat. For any such strategy to be successful, it must be carried out in a way that properly balances environmental protection, public access, and the rights of private property owners. To do this, local jurisdictions and the Coastal Commission itself must have clear guidance on the application of takings jurisprudence. Without such guidance, it has been Surfrider's experience that public access and coastal habitat protection are often sacrificed over a fear of future takings claims even if those fears are not well founded. As a result, Surfrider requests that the Coastal Commission convene an expert panel to evaluate the takings issues that are potentially implicated by planning and permitting that accounts for sea level rise. This panel should work to develop recommendations and guidance for the Coastal Commission on how takings issues can be proactively and effectively addressed so that the Commission is able to exercise its authority within constitutional parameters."	A chapter on the legal context of adaptation planning has been added to the document. The Coastal Commission recognizes that, given the scale of the challenge posed by sea level rise, solutions need to come from many different sectors of society and levels of government (e.g. individual, local, state, national, and global) and require a variety of different approaches and innovative partnerships. Land use planning, the focus of this Guidance, is just one of the approaches that must be part of the solution. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Coastal Commission recognizes that for particularly challenging issue areas, such as critical facilities at risk from sea level rise as well as legal concerns, additional targeted efforts will be needed, such as technical working groups, funding for pilot projects, research on innovative approaches, creative partnerships, and additional guidance.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"The Commission should protect public trust lands newly acquired due to sea level rise"	A chapter on the legal context of adaptation planning as well as a guiding principle related to protecting public trust lands have been added to the document. The Coastal Commission will continue to coordinate with the State Lands Commission on issues related to public trust.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"The Commission should use common law doctrines as affirmative remedies to address sea level rise."	The Coastal Act and certified LCPs remain the standard of review for projects in the Coastal Zone. A chapter on the legal context of adaptation planning has been added to the document.

Name/ Affiliation	Key Topic	Comment	Response
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"Activities that endanger public life or health, obstruct the free use of property, interfere with the enjoyment of life or property, or unlawfully obstruct the free passage or use of navigable waters also may constitute a public nuisance. For example, coastal armoring that encroaches on public land has been held a public nuisance in California justifying removal without the payment of compensation. In Florida, construction seaward of an established control line 50 feet from mean high tide is prohibited as a public nuisance under the Beach and Shore Preservation Act. Bulkheads or sea walls that flood adjacent properties or cause public beaches to disappear also may be considered a public nuisance."	A chapter on the legal context of adaptation planning has been added to the document. Chapter 7 (Adaptation Strategies) presents a wide array of options for adaptation, including removal of seawalls, threatened structures, or vulnerable development.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Adaptation	"The Commission should recognize rolling easements as a regulatory tool to adapt to sea level rise."	The use of rolling easements is identified as a possible adaptation strategy in Chapter 7 (Adaptation Strategies) of the document. As stated in the document, these adaptation strategies should be implemented on a location specific and case-by-case basis and in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"The Commission should consider sea level rise when implementing the CZMA and CEQA...The California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) provide another opportunity for the Commission to recommend measures to mitigate impacts of development projects on public trust uses, including public access and the preservation of open space and natural areas needed to protect the coastal zone against the impacts of climate change and sea level rise."	Thank you for your comment. The Commission has routinely considered sea level rise when implementing the Coastal Act and the CZMA. However, the Coastal Commission does not review CEQA or NEPA documents such as EIRs or EISs except as additional information during the review of permit applications and/or Coastal Act related responsibilities.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"The Guidance should clearly reflect principles espoused in the California Climate Adaptation Strategy...The Ocean and Coastal Resources Section of the CAS identified key principles to guide coastal adaptation decisions. We urge the Coastal Commission to ensure that the Guidance clearly reflects and reiterates these key principles: 1. California must protect public health and safety and critical infrastructure. 2. California must protect, restore, and enhance ocean and coastal ecosystems, on which our economy and well-being depend. 3. California must ensure public access to coastal areas and protect beaches, natural shoreline, and park and recreational resources. 4. New development and communities must be planned and designed for long-term sustainability in the face of climate change. 5. California must look for ways to facilitate adaptation of existing development and communities to reduce their vulnerability to climate change impacts over time."	The Introduction includes a section on state efforts to address climate change and sea level rise and acknowledges the Coastal Commission's ongoing efforts to coordinate and maintain consistency with other state agencies on future projects.

Name/ Affiliation	Key Topic	Comment	Response
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Adaptation	"The Guidance should restrict new development in hazard zones and evaluate existing vulnerable developments."	Strategies for restricting or limiting new development in hazardous areas as well as strategies for addressing existing vulnerable development are identified as possible adaptation strategies in Chapter 7 (Adaptation Strategies) of the document. As stated in the document, these adaptation strategies should be implemented on a location specific and case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Adaptation	"The Guidance should recommend adaptation strategies that enhance an ecosystem's natural adaptive capacity and discourage the use of "coastal armoring" structural barriers."	A number of strategies designed to protect both natural resources and development without the use of hard armoring are presented in Chapter 7 (Adaptation Strategies) of the document. As stated in the document, these adaptation strategies should be implemented on a location specific and case-by-case basis in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Funding	"Prioritize funding for non-structural protection measures that enhance an ecosystem's natural adaptive capacity."	Thank you for your comment. Language has been added to the document emphasizing the need for continued funding and technical support for local and regional jurisdictions. Chapter 7 (Adaptation Strategies) includes non-structural adaptation measures such as living shorelines. As described in the chapter, adaptation strategies should be considered on a location specific, case-by-case basis, and local governments should implement them in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Adaptation	"Protect and buffer critical habitats so that they can migrate inland as sea level rises."	Buffers and other similar strategies that may be useful for protecting critical habitats are presented in Chapter 7 (Adaptation Strategies) of the document. As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Adaptation	"Restrict the use of sea walls and other structural protective barriers where a less environmentally damaging alternative exists."	Guiding Principle #12 recommends avoiding the perpetuation of shoreline armoring in order to maximize natural shoreline values and processes. Additionally, a number of strategies for protecting existing development or designing and siting new development without the use of hard armoring are presented in Chapter 7 (Adaptation Strategies). As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis.

Name/ Affiliation	Key Topic	Comment	Response
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"The Guidance should recognize and safeguard the state's network of marine protected areas. The Coastal Commission could include very straightforward language in its Sea Level Rise Guidance to identify MPAs, and other marine areas with protective designations, as sensitive areas meriting special protection under the Coastal Act. Section 30230 states that "[s]pecial protection should be given to areas and species of special biological or economic significance." A finding that MPAs are areas of special biological or economic significance reflects the strong overlap between Section 30230 and the goals of the MLPA to protect rare habitats, natural diversity of marine life and the integrity of marine ecosystems. Section 30230 goes on to state that "[u]ses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms...." The guidance could provide further justification for protecting MPAs by emphasizing their importance in sustaining biological productivity through the protection of large prolific fish and their value in protecting the integrity of marine ecosystems, thereby maintaining healthy populations of all marine species."	Thank you for your comment. This topic is outside the scope of this Guidance. However, the Commission is aware of and involved in issues related to MPAs and areas of special biological and economic significance and how they relate to Coastal Act resources.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"The Guidance must ensure the protection of public access to coastal areas and beaches. The current draft of the Guidance under emphasizes the importance of continued public access in the face of sea level rise. The Coastal Commission must ensure that the final Guidance provides clarity to agencies on how to preserve public access to the beach and coast, as well as protect other coastal recreational resources. Therefore, the Guidance should require that public access be designed to remain viable for the life of the project or that alternative access be provided similar to requirements recently adopted by the San Francisco Bay Conservation and Development Commission (Bay Plan Public Access Policy 6)."	Guiding Principle #11 calls for providing maximum protection of public access and recreational opportunities even as sea levels rise. Additionally, a number of strategies for protecting access and recreational opportunities are presented in Chapter 7 (Adaptation Strategies). As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis and should be implemented in a way that fulfills the requirements of the Coastal Act and accounts for local conditions.
Sara Aminzadeh, Executive Director, California Coastkeeper Alliance	Policy and Legal analysis	"In order to mitigate the loss of the public's enjoyment of coastal areas, the Guidance should advise state and local entities to immediately commence an assessment of vulnerable coastal state and county parks, beaches, and shoreline areas. Subsequently, state and local agencies should consider and apply strategies to retain natural coastal areas such as managed retreat, and the purchase of conservation easements behind existing public natural areas to allow for inland migration."	Guiding Principle #11 calls for providing maximum protection of public access and recreational opportunities even as sea levels rise. Additionally, a number of strategies for protecting access and recreational opportunities are presented in Chapter 7 (Adaptation Strategies). As stated in the document, these adaptation strategies should be considered on a location specific and case-by-case basis. Staff considered this issue during the revisions to the Guidance and will continue to coordinate with other state agencies on these challenges.

Name/ Affiliation	Key Topic	Comment	Response
SANDAG	Adaptation	"The SANDAG Shoreline Management Program calls out beach nourishment specifically as one way to address coastal erosion concerns. The SANDAG planning program also acknowledges another benefit of beach nourishment, combatting the rising sea levels. Therefore, SANDAG policies are consistent with the California Coastal Commission (Commission) Draft Sea-Level Rise Policy Guidance. "	Thank you for your comment. We appreciate your review of the document.
Bob Shapiro, Public Citizen	Best Available Science	"The best science is quite opposite to what you say in your draft...Natural causes have explained most of the temperature increases since WWII, projections of 1.4 meters of sea level rise are anti-science, since they are impossible to falsify in the lifetime of all but a few of today's babies. Even if 1.4 meters rise actually comes to pass, do you seriously think anyone in their right minds would believe that any power plant would have been built within 5 feet of sea level?"	Best available science indicates that global climate change will have increasingly significant impacts on California and its coastal environments and communities. The Coastal Act mandates the California Coastal Commission to “protect, conserve, restore, and enhance” the state’s coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities. The Commission recognizes the challenges posed by uncertainty in the sea level rise projections. For the near future (out to 2030), confidence in the global and regional projections is relatively high, but uncertainty grows larger as the time horizon of the projection is extended forward. There are large uncertainties in projections for 2100 made using any existing methodology, including process-based numerical models, extrapolations, and semi-empirical methods. The actual sea level rise value for 2100 is likely to fall within the wide uncertainty bounds provided in the NRC 2012 Report, but a precise value cannot be specified with high confidence. Projections can be refined in future decades as we continue to gather additional sea level rise and vertical land-motion data from tide gages, satellite altimetry, and GPS surveys, and as long-term trends become clearer. A section on scenario-based planning and how to use this to address uncertainty has been added to Chapter 3 (Sea Level Rise Science).

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 41, Table 4. We suggest two changes: The name for the NOAA tool should be: "NOAA Sea Level Rise and Coastal Flooding Impacts Viewer"; Under the "Source" column, we suggest putting the name of the sponsoring/developing organization along with the URL (i .e., NOAA Coastal Services Center, http://csc.noaa.gov/digitalcoast/slrviewer). This is a similar to the format used in Table 13 (pg 139)."	Changes made as suggested.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 130, Table 11. We suggest three changes: The "Specifics of Information" column needs bullets or punctuation between entries; Under the LiDAR entry, the "Source" should be listed as "NOAA's Digital Coast, http://csc.noaa.gov/dataregistry/ "; Change "NOAA Sea Level Rise Viewer" to "NOAA Sea Level Rise and Coastal Flooding Impacts Viewer"."	Changes made as suggested.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 134, Table 12. We suggest two changes: Change "NOAA Digital Coast Sea Level Rise Viewer" to "NOAA Sea Level Rise and Coastal Flooding Impacts Viewer"; Change "Source" entry for the Viewer to "NOAA's Digital Coast, http://csc.noaa.gov/digitalcoast/tools/slrviewer "	Changes made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 139-140, Table 13. We suggest two changes: Under the LIDAR entry, the "Source" should be listed as" NOAA's Digital Coast, http://csc.noaa.gov/dataregistry/ "; We are not sure what the "Beach Profiles and Surveys" is referring to. The link provided is no longer valid and the description appears incomplete."	The referenced table was updated.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 161, Table 14. The reference for "Scanning the Conservation Horizon" is incorrect. It should be "Glick, Stein and Edelson, editors, 2011."	Change made as suggested
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 164, Table 25. Consider adding Digital Coast as another entry."	Change made as suggested

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Chapter IV provides a step-by-step process for addressing to sea-level rise in local coastal programs and Chapter V provides a step-by-step process for addressing sea level rise in coastal development permits. The reader may benefit if the format for describing the steps was standardized for both chapters. For example: Each step could follow a format using similar bullets or numbered lists throughout. Step 4 in Chapter IV provides an example of how this could be done or copied in other chapters. Each sub-step follows the same format and uses the same type of bullets (in this instance, check marks). Appendix C also provides an example of how formatting can be standardized (in this instance, providing a narrative, bulleted list, and tables). Each step could include a text box at the beginning that has the very basic summary of that step, summary of sub-steps, or a simple for checklist for that step. Chapter IV includes a simplified flowchart at the beginning of the chapter on page 38. Chapter V could also include a simplified flowchart taken from the more detailed flowchart on page 81. Each chapter includes a color-coded flowchart at the end. The enumerated step headings could be colored to match the boxes highlighting each step."	Formatting has been revised to ensure consistency throughout the document.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 19: The sentence providing examples of state agency policies and guidance on sea level rise is long. Using a bulleted list may break up the examples and make it easier to follow. For example: "The San Francisco Bay Conservation and Development Commission (BCDC) amended the San Francisco Bay Plan to update its policies regarding sea-level rise; the California State Coastal Conservancy (Conservancy) established climate change policies, application guidelines for sea-level rise, and climate ready principles; and the California Department of Transportation (CalTrans) developed guidance on incorporating sea-level rise into the planning and development of Project Initiation Documents, and is in the process of developing "hot spot" vulnerability assessment of transportation infrastructure at risk from sea-level rise."	Change made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 22: It is unclear from the introduction in Section 2, Principles for Addressing Sea Level Rise in the Coastal Zone, whether there are four primary principles with principles or 17 principles that fall under common headings."	There are 20 principles that fall under common headings in Chapter 2 (Principles for Addressing SLR in the Coastal Zone).
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	Planning	"Page 26: 'Planning and project development should evaluate the societal and ecosystem service benefits of coastal resources at risk from sea-level rise or actions to prepare for sea-level rise.' It may be helpful if societal service benefits and ecosystem service benefits were defined in the glossary."	Ecosystem services were defined in the glossary, including reference to societal benefits.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"Page 28: 'This chapter includes: A) Sea-level rise background information and a description of the best available science on the subject, B) Sea-level rise impacts to coastal areas, C) Implications of sea-level rise for coastal resources' It could be helpful if the topics B and C listed at the top of page 28 were more consistent with the wording found in the headers of pages 30 and 32."	Changes made as suggested.

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	General	"We appreciate the obvious connections to the Coastal Commission's recently updated strategic plan as well as your FY 12 Project of Special Merit described on pages 88 and 90, respectively. When developing new guidance such as this, building from existing work and priorities within the coastal program is important."	Thank you for your comment.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	Planning	"We suggest considering the addition of a bullet under "additional items" on pp. 90-91 related to local government and Coastal Commission staff capacity to interpret and review the climate information submitted via coastal development permits. Once local jurisdictions incorporate sea-level rise considerations into their local coastal programs, there may be a new need for local and state planners to understand how to review this information and ensure sea level rise is appropriately and accurately considered in project design."	Language has been added to the document acknowledging the scope of these challenges and emphasizing the need for continued funding and technical support for local and regional jurisdictions. The Commission plans on hosting a variety of trainings and workshops relating to this guidance after its adoption.
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	Adaptation	"We note on page 91 a reference to living shorelines. Our offices host a regular webinar series on this topic, and archived webinars are available. NOAA also has a cross-office team who collaborates and shares information on living shorelines. If additional information or support on this topic is needed, please let us know."	Thank you for your comment. Chapter 7 (Adaptation Strategies) also provides a wide range of adaptation strategies, including non-structural adaptation measures such as living shorelines.

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	Planning	"We understand that the Commission's first and foremost goal is preserving coastal resources. The economics of sea level rise (both the cost of impacts and the cost of mitigation measures) remain a top concern of local municipalities. In addition to citing the Project of Special Merit on page 90, you may wish to consider mentioning economic cost and benefit analyses, tools, and data sources as a starting place for evaluating scenarios and costs. Economic guidance resources could be added to the appendices. One possible resource is the report, "What Will Adaptation Cost? An Economic Framework for Coastal Community Infrastructure/" released by the NOAA Coastal Services Center in June 2013."	This resource on the economics of sea level rise was listed in the Resources for Assessing Adaptation Measures Table in Appendix C (Resources for Addressing Sea Level Rise).
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	Planning	While we recognize that the Commission's coastal management program authorities are unique, at your request we could share information on other coastal programs' approaches and efforts if the guidance document authors deem that information to be helpful.	Thank you for your comment. This Guidance provides a broad framework for addressing SLR in Coastal Commission-related land-use planning and therefore provides a starting point for additional planning on the topic-specific level. More detailed work will be necessary to address specific challenges as the state moves forward in sea level rise planning and adaptation. The Commission will continue to coordinate with local, state, and federal agencies to share information and resources.

Name/ Affiliation	Key Topic	Comment	Response
NOAA Coastal Services Center and Office of Ocean and Coastal Resource Management	Policy and Legal analysis	<p>"Last and most critically, the document and Commission staff state that the guidance will not be an enforceable policy of the California Coastal Management Program, will not be submitted to NOAA as a program change under the Coastal Zone Management Act, and will not be used for federal consistency purposes. However, the sub-heading on page 22 asserts that sea-level rise will be integrated "into all appropriate coastal management and decision-making processes, including ... federal consistency decisions." In the document, please clarify this potential discrepancy. We would also like to discuss this issue with you before the guidance is finalized to make sure we have the same understanding."</p>	<p>This language has been updated based on coordination among Coastal Commission and NOAA staff and now reads: "This guidance document is intended to help implement the Coastal Act and LCPs in the context of sea level rise concerns. However, the standard of review for commission actions remains the California Coastal Act or applicable certified LCPs. In particular, the recommendations of this guidance do not constitute "enforceable policies" for purposes of CZMA federal consistency reviews. The enforceable policies for conducting federal consistency reviews will remain the policies of Chapter 3 of the Coastal Act. Also, for federal agency activities, the standard is consistency "to the maximum extent practicable," with Chapter 3, <i>i.e.</i>, federal agency activities must be fully consistent unless existing law applicable to the federal agency prohibits full consistency. See 15 CFR. §§ 930.32 and 930.43(d). However, the Commission looks at sea level rise as one part of determining the coastal effects from an activity through CZMA federal consistency reviews and the use of this guidance by all parties should help determine what those coastal effects may be or how effects from sea level rise may be mitigated. Pursuant to 15 CFR § 930.11(h), implementation of this guidance would not be grounds for an objection (because it is not an "enforceable policy") but it might be one means that "would allow the activity to be conducted consistent with the enforceable policies of the program" in order to avoid an objection."</p>