State of California
**DEPARTMENT OF TRANSPORTATION**

California State Transportation Agency

# Memorandum

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**To:** CHARLES LESTER
EXECUTIVE DIRECTOR
CALIFORNIA COASTAL COMMISSION

**Date:** February 14, 2014

**File:**

**From:** KATRINA C. PIERCE [redacted]
Chief
Division of Environmental Analysis

**Subject:** **CALTRANS COMMENTS ON "CALIFORNIA COASTAL COMMISSION DRAFT SEA LEVEL RISE GUIDANCE"**

As the owner-operator of the State Highway System (SHS) along the California coast, the California Department of Transportation (Caltrans) appreciates the opportunity to comment on the "California Coastal Commission Draft Sea Level Rise Guidance" (Guidance). Caltrans commends the California Coastal Commission (CCC) for taking this important step in outlining guidance for incorporating projected sea level rise into CCC policies and planning.

Caltrans strives to maintain the SHS in a safe and operationally sound condition while moving people and goods daily and in emergencies. In turn, the SHS provides access to the many resources found within the coastal boundaries. In this respect, the SHS provides dual function as a coastal resource and an element of critical infrastructure.

This letter outlines key comments (KC) with examples related to the 17 guiding principles (GP) outlined in the Guidance. In addition, please find attached a comment matrix that includes specific comments pertaining to sections of the Guidance.

**KC 1: Mitigation has a nexus to impacts.**

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 has begun to identify the potential effects of sea level rise for transportation facilities within the coastal zone to ensure that consideration is given to how future sea levels will affect transportation facilities. Additionally, Caltrans currently considers impacts to coastal resources because of the actions of proposed projects. 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.

This comment relates to Guiding Principles 1, 6, 11, 12, and 13.

**KC 2: 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.

This comment relates to Guiding Principle 6.

**KC 3: 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. This section of the Coastal Act also allows shoreline protection for existing structures, public beaches, and to preserve sand supply. 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 Caltrans. 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 rock slope protection, soldier pile walls, and retaining walls 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.

Caltrans recommends a close examination of the Guidance in relation to Section 30235.

This comment relates to Guiding Principles 8 and 10.

**KC4: 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.

This comment relates to Guiding Principles 1, 2, 9, 12, and 16.

**KC5: 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.
This comment relates to Guiding Principle 4.

**KC6: 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.

**KC7: Caltrans looks forward to working with CCC staff and the LCPs on updating local coastal programs.**

As a continuation of the cooperation exercised thus far between Caltrans and CCC on this Guidance, we request that the CCC facilitate the needed interaction between Caltrans and local agencies as they update their LCPs.

Caltrans agrees that incorporation of sea level rise into the planning and project development process is important. We look forward to working with CCC staff to address practices and methodology that will enable Caltrans and CCC to collaborate on efforts to address sea level rise concerns while also meeting each other's respective goals and missions.

If you have any questions regarding this letter and the attached comment matrix, please feel free to contact Brenda Powell-Jones of my staff at 916-653-0255.

Attachments
(1) Caltrans Specific Comments on the CCC Draft Sea Level Rise Guidance

c: Susan Hansch, Chief Deputy Director, California Coastal Commission
Sea Level-Rise Working Group

Attachment 1: Caltrans Specific Comments on the CCC Draft Sea Level Rise Guidance
February 14, 2014

| Comment No. | Section | Start Page | End Page | Comment |
|---|---|---|---|---|
| 1 | | 32 | 32 | Discussion regarding public infrastructure is focused on low lying roads. What type of analysis does other coastal roads in light of emphasis on preventing erosion? |
| 2 | Executive Summary | 7 | 7 | Step 2: Identify potential physical sea-level rise impacts… Should read "Using the sea-level rise proje |
| 3 | Step 4 | 129 | 129 | After the first paragraph of **STEP 4: Project Tidal Range …** Add "Local Tidal Elevations are availabl NOAA. Where there are no nearby gauges, NOAA recommends the VDatum software." Please ackn acceptable. |
| 4 | Table 12 | 134 | 134 | Add resource: "NOAA Technical Report NOS 2010-01"<br>Specifics of Information: "Technical Considerations for use of Geospatial Data in Sea Level Change technical guidance to agencies, practitioners, and decision-makers seeking to use geospatial data to assessments."<br>Source: http://www.tidesandcurrents.noaa.gov/publications/tech_rpt_57.pdf |
| 5 | Table 12 | 134 | 134 | Add resource: "Vdatum".<br>Specifics of Information: "This is a software tool developed by NGS and The Office of Coast Survey ( between a variety of vertical and horizontal datums. VDatum allows users to convert data from differe particularly in coastal regions."<br>Source: http://vdatum.noaa.gov/ |
| 6 | | 158 | 158 | Many coastal soils are uplifted marine deposits and don't readily infiltrate water. Soft or vegetative inf and unsustainable in these locations. If conditions warrant, hard structures should be considered. |
| 7 | | General | | This guidance is based on the assumption that the current state of the coast should be relatively account other factors that will affect habitat types, dune formation, etc. How will the guidance consid current state of the coast habitats? |
| 8 | | 50 | 50 | Convert Vulnerable areas to conservation or open space sites: Can the mechanisms proposed here agencies for mitigation? |
| 9 | Section 4.4, bullet 6 | 58 | 58 | Rolling conservation easements are not a practicable policy recommendation since conservation eas entire parcels and the act of the easement rolling to another property would require that the adjacent have already developed their property. Suggest modifying this policy to state that conservation easen ensure policies are consistent with best available science regarding sea level rise projections. |
| 10 | Section 4.4, bullet 7 | 58 | 58 | Areas identified for public acquisition should also be identified as Areas of Conservation and be cons Conservation for better consistency throughout the state. |
| 11 | Section 4.4 | 57 | 59 | This document ignores the freshwater supply to wetlands. While I understand that this document focu an important part of the whole story of how wetlands will be affected by SLR and whether or not main with the addition of a new no-net-loss policy. |
| 12 | | 60 | 60 | Retrofit or relocate outfalls deemed "at risk". Please provide further information as to what time frame warranted. Is the idea to retrofit or relocate as other development projects are proposed in conjunctic Further details would assist Caltrans in determining potential efforts and funding potentially requred. |

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| Comment No. | Section | Start Page | End Page | Comment |
|---|---|---|---|---|
| 13 | Step 5 | 63 | 63 | Please clarify which jurisdictions/ local governments that this step applies to. Presumably, it would b required to complete an LCP required by the Coastal Act. It would be useful to provide a list of the ci that are 1- required to have an LCP, 2- which cities/ counties have current LCP that address sea leve and 3- which LCPs need to be updated. |
| 14 | | 64 | 64 | Next to last paragraph on page, beginning with "This six-step process…" The guidance indicates tha change, and that planners will need to repeat the six-step process. These 2 sentences are unecessa regularly repeat this process on their own outside of the LCP update process. |
| 15 | A.4 | 110 | 110 | Footnote 28 lists a 4th approach to projecting future global sea level rise. This should be listed with tl of the text. |
| 16 | | 52 | 52 | "Analysis should be conducted by a civil engineer with expertise in coastal process". Is a Civil Engin processes (?) the only type of acceptable coastal project analysis that will be considered/approved? as to level of experience/ expertise that is expected? |
| 17 | | General | | Document identifies multiple negative potential impacts due to climate change in general and SLR sp identification of potential positive impacts and how CCC policy should address such positive change' |
| 18 | Executive Summary and III.C | 3 | 3 | Identification of $100B of property risk from 1.4m SLR and "a 100-yr flood" is misleading. Such f coast simultaneously. |
| 19 | Section C, Item 10. | 25 | 25 | Requires use of "least environmentally damaging alternative", but does not address or identify the ne provide functionality as a minimum criterion. |
| 20 | III.A | 29 | 29 | Text states that low end SLR projections from NRC Study "likely under represent future sea level rise make any such suggestion. CCC should avoid this statement. |
| 21 | App. B | | | Every individual component is required to be viewed at its worst. When summed, these combination become overly conservative. For example, it's essentially required to assume highest case scenario events and worst case criteria for beach sand removal. However, higher rates of bluff erosion and la higher volumes of sand. |
| 22 | App. B | | | Document presumes that SLR will always lead to greater wave energy due to deeper ocean water. T prognosis. SLR will also shift the ocean landward, such that the location of wave generation/amplific location at similar, or even potentially reduced, water depth. Ultimately, it is the seafloor bathymetry t simply an assumption of greater ocean depth from SLR. |
| 23 | Appx. B, Step 5 | 134 | 134 | Assessing impact of El Nino's and Pacific Decadal Oscillation (PDO) is both confusing and in need o degree, El Nino effects are included in the historic tide record, so adding on El Nino affects is likely a Even a typical 19-yr tide record epoch will contain several El Nino/La Nina cycles. However, PDO cy Tide records don't adequately record these effects and they are not well understood. The scientific c and persistent winds are suppressing California coastal SLR….but there is no clear verification of this current extent or future impact. It is quite possible that when attempting to address a year 2100 "con PDO effects as being helpful (i.e., cycle is such that Ca. Coast SLR is suppressed). Again, the guida worst case scenarios that may not occur simultaneously. |

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|---|---|---|---|---|
| 24 | Step 4 | 51 | 51 | This could be an issue for roadside improvements in the future if wells are the only way to provide a s efforts. |
| 25 | | 19 | 19 | Reference to Hot Spot map. Although Caltrans will be conducting vulnerability assessments, due to t of the "hot spot" map, please delete specific reference to the map. |
| 26 | VIII | 92 | 92 | Include definitions for "Flooding" and "Inundation" |
| 27 | | 124 | 124 | For equations dealing with projections outside of the 2030, 2050 and 2100 years. What is the value "best available science" in consideration of the approach to monitor and re-evaluate projections and i Although many local jurisdictions may want to consider other planning years, for consistency across use the 2030, 2050 and 2100 at a minimum |
| 28 | Table 21 | 160 | 160 | Monitoring will require additional resources. If the expectation is that the applicant will be responsible cost of monitoring should be included in the cost-benefit analysis as recommended in the Caltrans K |
| 29 | Appendix E | 167 | 169 | Appreciate the references to Caltrans examples. It is noteworthy that guidance to RTPAs and MPOs |
| 30 | | General | | The report states that buildings should have sea level rise accounted for in facility elevations. They r architects land surveyors. That's OK but it is redundant to local authority for building permits. When problematic as we are entrusted with engineering responsibilities for the state highway system. It is CCC implies over engineering decisions through CDP process. Questions to validate outcomes may nor local agencies administering CDPs would have the authority to certify Caltrans engineering practi |
| 31 | | General | | Authority and responsibility for various proposed policies should be addressed and clarified througho |
| 32 | | 18 | | The paragraph discusses recent efforts to prepare for Sea Level Rise: Sentences in this paragraph r Resolution (2011) and establishing the State Sea Level Rise Guidance (2013): please provide the ag Resolution is cited in the references as a (OPC-2010) document. |
| 33 | | 38 | | Determining planning horizons. If LCPs begin using other planning scenarios other than the 2030, 2 projections, it may become difficult for other agencies to maintain consistency in analysis (apples to all LCP plans contain the minimum 2030, 2050 and 2100 year analysis and if other years are warrant |
| 34 | | 44 | | b. iii, unclear what is meant by " are there amounts of sea level rise that cause sensitivity to sea-level |
| 35 | | 56 | | "add policies to address impacts to transportation routes"…"establish new alternative transportation r routes/ facilities shall be coordinated with/ planned in conjunction with Caltrans. |