STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., GOVERNOR

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April 13, 2018

Ms. Deborah Smith, Executive Officer, Los Angeles Region
California Regional Water Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013
Email: losangeles@waterboards.ca.gov

Regarding: **Comment Letter – Climate Change Resolution**

Dear Ms. Smith:

Thank you for the opportunity to comment on the public review draft of the **Tentative Resolution No. R18-0XX ("A Resolution to Prioritize Actions to Adapt to and Mitigate the Impacts of Climate Change on the Los Angeles Region's Water Resources and Associated Beneficial Uses")**. We understand that you are accepting comments through April 13, 2018. We anticipate transmitting our comments via email by that date, with a hard copy to follow by regular mail for your records. Please note that your draft document has not been reviewed nor comments prepared by the California Coastal Commission (CCC) itself, but rather by Commission staff.

First, we commend you and your staff for taking this important step toward protecting coastal water resources in light of climate change impacts. We recognize that the State Water Resources Control Board adopted its first climate change resolution, "Comprehensive Response to Climate Change" on March 7, 2017 (Resolution No. 2017-0012) in light of Governor's Executive Order B-30-15 (April 29, 2015) which specifically addresses California's climate adaptation framework, and directs state agencies to factor climate change into their planning and investment decisions, guided by these key principles:

1) actions should be prioritized that build climate preparedness;
2) where possible, flexible and adaptive approaches should be taken to prepare for uncertain climate impacts;
3) the state's most vulnerable populations should be prioritized;
4) natural infrastructure solutions should be prioritized.

The Tentative Resolution appears to incorporate the EO-B-30-15 principles; The EO also requires the California Natural Resources Agency to update the state's climate change adaptation strategy "Safeguarding California" every three years (the latest update, "Safeguarding 2018" is pending). The California Ocean Protection Council (OPC) is the lead for the Ocean and Coastal Resources and Ecosystems Sector and has recently adopted the latest findings on sea level rise of the OPC Science Advisory Team (OPC-SAT) working group, and these findings will offer "best

available science" on sea level rise for "Safeguarding 2018". As you know, the OPC-SAT findings adopted by the OPC in 2017 include emerging information about the increased sea level rise risk posed to California by the contributions of West Antarctica ice sheet losses. The OPC's latest sea level rise assessment metrics therefore include the "H++" extreme sea level rise planning scenario developed by OPC-SAT last year. H++ anticipates the potential for as much as ten feet of sea level rise by the end of this century. OPC-SAT research on the H++ scenario continues, and while the OPC has not yet assigned H++ a probability factor as it has for other increments of sea level rise potential, the magnitude and timing, and the non-linear changes in sea level suggested by the H++ scenario send a strong signal to state agencies and local governments with responsibility for coastal resource planning.

Although we do not yet know if ten feet of sea level rise (OPC's H++ scenario) will occur by 2100, research published by the U.S. Geological Survey (USGS) in 2017 shows that by 2100 between thirty to seventy percent of southern California beaches from Santa Barbara to San Diego may become completely eroded by 2100 based on only one to two meters (approximately three to six and a half feet) of sea level rise. The USGS study uses a recently developed computer model "CoSMoS-COAST" (Coastal Storm Modeling System – Coastal One-line Assimilated Simulation Tool) to predict the extent of beach loss that will occur from the impact of sea level rise meeting the armored footprint of existing beachfront development and/or sea cliffs.

The USGS research and the early warnings of potentially even more extreme levels of sea level rise during this century underscore the importance of seeking other methods of addressing attendant risks to infrastructure along the edge of the rising sea. Coastal rail corridors, roads, wastewater treatment plants, drinking water infrastructure, and coastal resources including beaches, ecosystems and water supplies face unprecedented threats. Commission staff urges the Los Angeles RWQCB to include measures in **Tentative Resolution No. R18-0XX (Climate Change)** that reduce the need for armoring of existing development in favor of solutions that rely on climate change/sea level rise adaptation measures that ensure resilience of infrastructure and are protective of coastal resources and environmentally sustainable over the long-term. This means that the Resolution should clearly require appropriate, long-term advanced planning including relocation of development where feasible. Feasibility should take into consideration the economies of appropriate action, including the costs of mitigating the effects of armoring on beach profiles, the increasing maintenance costs and challenges of retaining threatened development in current shoreline locations, and the overall benefits of inland relocation as a long-term strategy and adaptation alternative offering maximum feasible protection of public beaches, wetlands, and other coastal ecosystems.

We note that continuing public access to California's public beaches is a matter of social and environmental justice. If California's heavily-visited southern California beaches are eventually lost due to rising seas meeting shoreline armoring at the water's edge, meaningful access to the California coast will be lost for most Californians. State residents and visitors of limited economic means would suffer the greatest loss of coastal access if public beaches are etched away by rising seas and coastal armoring fixing the otherwise naturally ambulatory line of the Public Trust boundary.

In light of these concerns, and in addition to the recommendations noted above, we suggest that the Tentative Resolution incorporate these comments and offer a few additional suggestions:

Recommended change (from preamble to the Resolution text):
6. Communities that are socially or economically disadvantaged are especially vulnerable to climate change impacts, due for example to limited access to clean and affordable water; lack of proper infrastructure to deal with extreme weather events and the economic resources necessary to prepare and respond to these events; proximity of environmental hazards; and lack of shade cover that heightens the risk of the urban heat island effect. **Public beaches are the most significant form of coastal access and recreation for most disadvantaged populations unable to afford the high cost of coastal real estate ownership. The benefits of coastal recreation will become even more important as a refuge from increasing urban heat effects projected as a consequence of climate change. The USGS projects the loss of 30 to 70 percent of public beaches in southern California by the end of the century where fixed shoreline armoring meets the rising sea. Future reliance on in-place armoring of shoreline development as an adaptation to sea level rise for the protection of drinking water, wastewater treatment, roads, railroads, and other infrastructure along the coast poses a threat to public coastal access for all Californians as beaches erode away, but the loss of public beaches will be disproportionately borne by environmental justice communities.**

Recommended change (Resolution):
1. The Board encourages stakeholders in the region, including other agencies **such as the California Coastal Commission, which unanimously adopted 2015 sea level rise adaptation recommendations *CCC Sea Level Rise Policy Guidance*, and local governments,** to take actions to help mitigate direct and indirect impacts of climate change on water quality and beneficial uses. Actions may include:
a) Watershed planning, **including reliance on best available science and emerging climate change and sea level rise monitoring tools such as CoSMoS, TNC's Coastal Resilience tool, the Pacific Institute hazards viewer and maps, Cal-Adapt, and the NOAA SLR Viewer, and** including coordination between regulatory and non-regulatory efforts to focus on measures to protect against climate change impacts such as stream and wetlands restoration, increasing shading to reduce water temperature and light penetration, streambank stabilization, and establishing buffer areas around waterbodies to minimize erosion and discharge of pollutants;
b) Managed retreat of vulnerable infrastructure ~~over~~ **instead of** in-place adaptation measures in areas at risk of sea level rise or flooding where in-place adaptation is not feasible and/or may impair beneficial uses **or increase the loss of sandy beaches due to increased erosion caused by shoreline armoring meeting rising seas**, and **interim soft solutions to** shoreline **erosion** protection techniques that protect, preserve, enhance, or restore beneficial uses. **Consideration of "feasibility" should take into consideration the economies of appropriate action, including the costs of mitigating the effects of armoring on beach profiles, the increasing maintenance costs and challenges of retaining threatened development in current shoreline locations, and the overall benefits of inland relocation as a long-term strategy and adaption alternative**

offering maximum feasible protection of public beaches, wetlands, and other coastal ecosystems.
c) Coordinating on the latest science and research on sea level rise effects on sea water instrusion from the perspective of coastal resilience and groundwater contamination, **including support for local and regional requirements to limit groundwater extraction that may exacerbate seawater intrusion in coastal aquifers, and for measures to monitor, meter, and report on existing and future proposed well development and other activities that affect groundwater dynamics at the saltwater/freshwater interface.**
d) Encouraging studies and documentation of the effects of climate **change** on habitat and ecological resources (e.g., trends in harmful algal blooms (HABs));
e) Coordinating with appropriate partners to anticipate and prevent hazards to water quality resulting from fire such as increased sediment and pollutant load, and incentivizing management measures that will ensure better resilience to fire, such as appropriate landscaping and erosion control measures.
...

3) The Board directs staff to incorporate considerations of expected impacts from climate change in its programs, including the following:

a) The Board directs staff to continue refining permit language to address climate change vulnerabilities, and to move forward towards incorporating appropriate language in National Pollution Discharge Elimination System (NPDES) permits, Clean Water Act (CWA) section 401 water quality certifications, waste discharge requirements (WDRs) and waivers of WDRs issued by the Los Angeles Water Board. The Board also directs staff to work with others to explore meaningful metrics and tools for conducting vulnerability assessments to ensure infrastructure protection. **These assessments should prioritize sea level rise adaptation needs for infrastructure protection through long-term inland relocation over in-place shoreline protective devices that increase shoreline erosion.**

...

Given that climate change will disproportionately affect disadvantaged communities, the Board directs staff to take into account environmental justice factors when addressing climate change impacts. **As noted in the preamble to this Resolution, public beaches are the most significant form of coastal access and recreation for socially and economically disadvantaged populations unable to afford the high cost of coastal real estate ownership. The benefits of coastal recreation will become even more important as a refuge from increasing urban heat effects projected as a consequence of climate change. The USGS has determined that 30 to 70 percent of public beaches in southern California may be lost by the end of the century due to increased erosion where development protected by shoreline armoring meets the rising sea. Future reliance on in-place armoring of shoreline development as an adaptation to sea level rise for the protection of drinking water, wastewater treatment, roads, railroads, and other infrastructure along the coast therefore poses a threat to public**

coastal access for all Californians as beaches erode away; however, the loss of public beaches will be disproportionately borne by environmental justice communities.

We further recommend that the Los Angeles Board's Resolution acknowledge the relationship between imported water supplies and the significant amount of energy required to transfer water to the Los Angeles region. All measures to conserve the use of water and reduce overall regional water demand have a direct impact not only on the overall supply of water in the state and within the Los Angeles region, but also have the potential to directly reduce energy consumption and the associated greenhouse gas emissions driving climate change.

Coastal Commission staff welcomes any future opportunity to coordinate with the Los Angeles RWQCB staff toward integrated climate change adaptation solutions. We have staff resources in the Commission's Statewide Planning, Energy & Ocean Resources, and Water Quality programs, and in the Commission's South Coast District Office in Long Beach to support collaboration with your staff. Please feel welcome to contact me directly for referral to Commission staff or informational resources. Thank you again for the opportunity to offer comments regarding Tentative Resolution No.R18-0XX (Climate Change).

Sincerely,

Madeline Cavalieri
Statewide Planning Manager