

Marin County Board of Supervisors
Via email: BOS@marincounty.org

Re. Hearing on LCP Amendments, Attachment 4, Environmental Hazards Chapter of the LUP

Dear Board of Supervisors:

In this letter, I will comment only on the EH Chapter. My comments on other LCP issues will come in separate letters. I was a member of the C-SMART committee on coastal sea level rise (SLR) threats and policies. I am a retired professor from UC Davis and taught Energy Policy for 25 years. I have been a local planning commissioner in California.

Planning period: Fifty years is too short a timespan for planning, especially for roads and utilities. Please extend the planning assessment period to 100 years. We know enough about SLR to predict it for much longer periods than 100 years.

Assumed SLR: The LUP policies include one to reconsider the EH chapter every 5-10 years, but will likely be in effect for much longer. The chapter is short-sighted, using old data on SLR. SLR will be much higher in 2100 than 3 feet. Current science projects a roughly 6-foot rise by 2100, due to Antarctic ice sheet melting (Nature, DeConto and Pollard, 3/31/16). This study used methods approved by the IPCC and so these findings will likely be included in the next official global study by the IPCC. Furthermore, when the on-going similar Greenland studies are completed, SLR projections for 2100 will increase another few feet. If we consider that, as more studies are completed SLR always goes up, we should consider these projections to be minimums, subject to being raised.

The import of these new projections is that the proposed EH chapter is predicated on the assumption that this is "planning as usual" and building owners will be able to raise their structures. That approach may work when considering 3 feet, is much-more difficult for 6 feet, and becomes nearly impossible when working with a SLR of around 9 feet. Similarly, moving the Coastline Highway and Sir Francis Drake Blvd can consider placing in fill, when planning for a 3-foot rise, but in some places, higher elevations will require relocation.

I tried to get our committee to identify and discuss long-range policies for much-higher SLR projections, such as moving communities to higher lands, piecemeal transfer of development rights, state and federal tax policy to allow writing off losses in real property value, etc. without success. Many people think that taking a long-range view will make SLR policy more contentious. Sometimes, looking at the truly long-range issues makes policymaking easier, as other more-creative policies are needed.

GHG Commitment:

Several recent technical papers about GHG "commitment" show clearly that the 100-year sea level rise (SLR) is between a quarter and an eighth of the 1,000-yr SLR, for any level of GHGs, after you level off emissions. This is mainly due to the lifetime of atmospheric CO2 and its slow uptake, mixing into, and release from the oceans, but also some other GHGs with atmospheric lives on the order of 10,000 years.

So, Highway 1 and other infrastructure design needs to consider not 3 feet, not 6 feet of SLR, which is considered radical, but much more in a couple of centuries, in the optimistic scenarios that have GHGs leveling off soon and falling to replacement levels by 2050. Replacement level is about an 80%

reduction from the current level, and so seems very unlikely to occur by 2050, politically. If the world doesn't adopt effective policies, the SLR curve is much higher. Only a huge effort at sequestering GHGs could turn downward the long-term atmospheric trajectory and then you are still stuck with the CO2 in the deep oceans taking centuries to rise to the surface and outgas to the atmosphere.

Highway 1 and some other facilities in Marin Co. will have to be moved up the hillsides 100's of feet in elevation, not raised a few feet, to avoid rebuilding them every few decades. The County and other agencies don't want to be wasting resources examining Highway 1 and other infrastructure relocation plans that are too temporary, over the life of the structures.

Conclusions: Please hold off on adopting the EH chapter until your staff can consider these comments. I think it needs to be recast in a truly long-term fashion and identify these much-higher SLR projections. As proposed, Marin County will go through years of contention over this chapter, for no good reason, as it will have to be redone in a few years to consider stronger policies.

Thank your for considering my comments.

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