



**Comments of Natural Resources Defense Council ("NRDC")
on OEHHA Draft Report "Cumulative Impacts: Building a Scientific Foundation"**

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Comments submitted by e-mail to: jsuero@oehha.ca.gov

We submit these comments on behalf of NRDC (Natural Resources Defense Council), which has 1.3 million members and activists, 250,000 of whom are Californians.

Clearly, a lot of work has gone into the development of the Draft report ("Draft"), and we commend OEHHA and the Cumulative Impacts and Precautionary Approaches Workgroup for taking on and addressing this important issue to develop a science-based approach to assessing cumulative impacts. The Draft is a great platform for developing a robust science-based approach to cumulative impacts, but we urge OEHHA to clarify or improve the Draft in the following respects.

Further Explain the Use of the Assessment to Evaluate the Cumulative Impact of Different Pollutants

While the Draft outlines how the assessment may be used to analyze a relationship between pollution burden and population characteristics, it does not sufficiently explain how the assessment would analyze the cumulative impact of different pollutants. The only sentence that seems to address this issue states that "These values [for each indicator] are then averaged for each component." (p. 36). However, the sentence does not specifically speak to the interaction between indicators for different pollutants. The report should flesh out this section to more fully explain how different pollutants can be analyzed together to evaluate the interactions between different pollutant exposures. An example that demonstrates how multiple pollutants are addressed would be particularly helpful here. This issue is especially important for multiple pollutants that act on the same physiological symptoms. For example, a community that is facing health threats from perchlorate in their water supply and PCBs from a local hazardous waste site, and that also has an underlying elevated rate of iodide deficiency from poor access to fresh foods, would be facing cumulative impacts putting people at risk for thyroid impairments and neurodevelopmental abnormalities in children. It would be helpful for OEHHA to offer specific examples of how to address these types of cumulative impacts.

Further Explain OEHHA's Selected Score Ranges

The Draft's explanation of the score ranges for the various components is currently rather opaque. For instance, the Draft states that the "range of 1-3 for socioeconomic status and sensitive subpopulations scores was based on scientific evidence suggesting that several-fold differences in response to environmental pollutants exist for certain populations based

on either socioeconomic factors or biological traits.” (p. 35). However, the Draft does not explain how those studies justified a range of 1-3 as opposed to a different range. The Draft refers readers to Chapter 1, but Chapter 1 does not lay out the rationale for the specific range of 1-3 selected by OEHHA. Nor does the Draft adequately explain the factors that justify a score range of 1-10 for exposure, except to say that there is better information available on exposure and that exposures are closely related to pollution impact. But, these factors do not explain why the range is 1-10 or offer a clear explanation for the selected ratio between exposure scores and other components. The report should more fully explain the rationale behind the score ranges selected and the relative weighting of the various components.

Explain Why the Indicators in Table 2 Were Selected, and Whether They Are Intended to be the Default

Table 2 on p. 33 of the draft is confusing to the reader because it appears to only include selected examples of indicators. Although the Draft states that the table is not all-inclusive, it is not clear whether the table is simply illustrative or whether it represents a default set of indicators unless it is amended. It remains unclear whether agencies will be looking at a wide set of other indicators, or whether the listed indicators are intended to be those chosen in most circumstances. If agencies will be selecting their own indicators, then it is not clear if they will only be altering the “Exposures” component to align with their prioritization needs, or if they will be also altering the other components. It would be helpful if the report further fleshed out the nature of Table 2 and its intended use.

To the extent that Table 2 is intended to be a representative set of indicators to be used in practice, there are other indicators that we would suggest for consideration, including educational level under socioeconomic status, the narrowing of “on road mobile sources” to focus on trucks instead of all vehicles, the use of cancer incidence rates instead of mortality rates (some environmentally-sensitive cancers, such as childhood leukemia, have relatively low mortality rates), and the use of the National Air Toxics Assessment dataset instead of the raw Toxics Release Inventory (TRI) data. We would also suggest that including both income level and poverty under the socioeconomic status component appears redundant, whereas including education would be less so. Including a nutrition-related variable (such as the number of supermarkets per unit distance) would have particular relevance for environmental cumulative impacts assessments, as nutritional factors are well-recognized to affect susceptibility to environmental toxicants. Regarding the use of the TRI data, it is unclear how the data would be used. Total TRI emissions is generally not a good measure of health hazard because these emissions are dominated by large amounts of less-toxic chemicals such as ammonia, and the most significant health threats to a community may be from neurotoxic or carcinogenic chemicals that are released in lower volumes. All of these issues could be addressed by providing more explanation in Chapter 3 of the draft, to discuss the choice of indicators and the rationale for their inclusion, to the extent that Table 2 is intended to be a representative set of indicators for broad use.

If Table 2 is intended to be purely illustrative, OEHHA should include in the table further examples of potential indicators for media other than air to better demonstrate the range of the assessment, in addition to clarifying the nature of the table.

Outline Principles to Guide Agencies in Carrying Out the Cumulative Impact Assessment Developed in the Draft

We realize that OEHHA plans to develop guidelines in the future for carrying out the assessments, but the success of the assessment largely depends on this more specific

guidance. Therefore, we urge OEHHA to at least outline principles here to be further developed in the guidance. Table 2 of the Draft, which lays out potential indicators for the various components raises a number of questions that are not fully answered by the surrounding text. How do agencies go about choosing the appropriate contributions to the relevant components and the appropriate indicators to ensure that the assessment is meaningful? The report would be more helpful if OEHHA provided more guidance on the appropriate considerations or criteria agencies need to evaluate to select the best contributions to the components and the indicators. For instance, in looking at socioeconomic status or sensitive populations, how should agencies determine the appropriate geographic unit for analysis? These and other questions will, of course, be more fully addressed in OEHHA's planned guidance, but some general principles that provide an architecture for the planned guidance would be helpful here. For instance, the report could explain that the geographic unit for analysis of socioeconomic status or sensitive subpopulations should be based on both the geographic scope of regulation and the granular level at which disparate impacts can be discerned and felt. Alternatively, the report could discuss the rationale for not following the NJDEP's approach of overlaying a small and consistent unit-size grid over the state that would allow fine-scale geographic analysis – this approach seems to hold promise to allow analysis at varying geographic scales.

Other Suggestions

We also note some other observations and suggestions here:

- The methodology for dividing California communities into relative deciles for assigning scores for the assessment raises some questions (p. 36). It raises the prospect of communities separated by minute differences in pollution or other characteristics ending up with arbitrarily different scores in the assessment because of the decile treatment proposed by OEHHA. The report should explain how OEHHA plans to address such situations. The decision to use a ranking system also creates the appearance that certain communities are 'worse' or 'better' than others, regardless of the actual health risk, and does not appear to acknowledge the fact that all communities that experience a set of these impacts should be recognized and prioritized.
- The definition of ecological effects in Chapter 2 should be broadened to provide a more comprehensive sense of the breadth of issues covered under that cumulative impact component. For instance, the definition of ecological effects on page 26 should be expanded beyond strictly the largely natural resource issues currently suggested to issues such as crop loss due to pollution. The effects of climate change should also be discussed in greater detail, including the importance of factors such as impervious surfaces in communities (which increase risk of water quality impairments, flooding, and heat-related illness).

Respectfully,

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