



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

January 23, 2013

Dr. John Faust
Chief, Community Assessment & Research Section
Office of Environmental Health Hazard Assessment
1515 Clay Street, Suite 1600
Oakland, CA 94612

Re: Second Public Review Draft of California Communities Environmental Health Screening Tool (CalEnviroScreen) and Draft Guidance

Dear Dr. Faust:

I am writing to provide comments on the Second Public Review Draft of CalEnviroScreen, and the draft guidance for potential uses of this tool, which were released for public review by Cal/EPA and OEHHA on January 3, 2013. These comments supplement the input provided by Dr. Phil Martien of my staff at the January 11, 2013 CIPA Work Group meeting. Cal/EPA and OEHHA have indicated that the first version of CalEnviroScreen will be released for use on March 1, 2013.

First, we would like to commend OEHHA in their development of this new screening tool. The development of a statewide screening methodology that considers pollution burden as well as indicators of vulnerability is particularly significant. CalEnviroScreen can serve as a valuable tool for agencies -- for example, for identifying areas within California that should be evaluated with more refined analyses of health risks.

As you may know, in 2004 our Air District initiated the Community Air Risk Evaluation (CARE) Program in the Bay Area (<http://www.baaqmd.gov/Divisions/Planning-and-Research/CARE-Program.aspx>). The CARE Program uses detailed regional modeling and monitoring data to establish spatial concentrations of air pollutants, which are then combined with demographic data to identify impacted communities (i.e., areas with higher pollutant exposures and higher densities of sensitive populations). Information derived from the CARE Program is used to focus emission reduction measures, including the distribution of Carl Moyer grant funding. The CARE Program's technical analysis is updated and improved on an ongoing basis.

CalEnviroScreen is being developed as a screening methodology to provide a broad picture of the burdens and vulnerabilities different areas face from environmental pollutants based on data that are available on a statewide basis. As such, indicators used in CalEnviroScreen have been selected in consideration of the availability and quality of such data at the necessary geographic scale statewide. As OEHHA has indicated, more precise data

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are often available to local governments, and the use of these data may generate more refined results for these areas. We believe that this is the case with our CARE Program results (e.g., where fine particulate matter and toxic air contaminant exposures are estimated based on modeled air concentrations using detailed local emissions inventory data).

Our specific comments on the current draft version of CalEnviroScreen and the policy memorandum follow:

- (1) Our primary concern with CalEnviroScreen is the methodology's lack of consideration of aggregate population health risks that result from environmental exposures. Population Characteristics in the tool are based entirely on the rate of various indicators within an area, without consideration given to the number of individuals present in the area (except that some low incidences or small counts have been excluded).
 - a. While health risks to individuals and smaller communities should certainly not be neglected, the number of individuals in an exposed population ultimately factors into the likelihood of adverse health outcomes. The lack of consideration of aggregate population risk may be appropriate for some screening uses, but not others. For example, in our CARE Program analyses, we consider the number of sensitive individuals per unit area exposed to air pollutants in identifying disproportionately impacted communities for the allocation of Carl Moyer grant funding. Cal/EPA and OEHHA have indicated that CalEnviroScreen will inform Cal/EPA's implementation of the mandate to identify disadvantaged communities under SB 535, which in turn will affect the allocation of available funds from SB 32 carbon auctions. Depending on the manner in which this is ultimately done, use of the current CalEnviroScreen methodology could inappropriately bias the allocation of funds towards lower population areas.
 - b. One way to address this issue in the methodology might be to determine scores using census tracts (or tract subunits), the areas of which are based on roughly equal population numbers. We understand that future versions of CalEnviroScreen may incorporate this approach.
- (2) OEHHA may want to consider crowding (in dwellings) as an additional Socioeconomic Factor indicator. California has by far the highest rate of severely-crowded households (defined as more than 1.5 persons per room) of any state (<http://www.census.gov/hhes/www/housing/census/historic/crowding.html>). Although it has been difficult to establish direct causal links between crowding and health effects due to a variety of confounding

factors, studies have shown that crowding is stressful for children as well as adults (see, for example: *Definitions of Crowding and the Effects of Crowding on Health*, Gray Matter Research Ltd., prepared for the Ministry of Social Policy, New Zealand, 2001), thereby potentially increasing vulnerabilities to cardiovascular problems and other stress-related pathologies. Data on crowding are available from the U.S. Census Bureau at the census tract level.

- (3) The methodology for the exposure indicator "Toxic Releases from Facilities" could be improved.
- a. Emissions into the air from facilities would seem to be a much more important factor in exposures and health risks than emissions into waterways, and yet both are weighted equally.
 - b. TRI emissions data are only available for certain types of facilities and are self-reported and not subject to agency review. Air district emissions inventory data (reported to CARB) would be a better indicator.
 - c. Air concentration data from the 2005 NATA would also seem to be a more robust indicator than TRI emissions data.
 - d. The CalEnviroScreen methodology ranks areas based on the total quantity of TRI hazard-weighted emissions occurring within census zip codes. This approach seems to differ from what is used for the other five exposure indicators, which focus on the concentration or density of the indicator within an area. For example, in the methodology for the Pesticide Use indicator, total pounds of selected pesticide active ingredients used in a census zip code are appropriately divided by the zip code's area. This should also be done for the "Toxic Releases from Facilities" indicator.
- (4) All of the Pollution Burden and Population Characteristics indicators used in CalEnviroScreen are given equal weight in determining a final score, except for the four Environmental Effects indicators, which are weighted at one half the others. The reason for this is not discussed, but presumably it is related to a lack of a scientific basis to do otherwise. We believe that this topic should be addressed in more detail in the final methodology document, perhaps in the section on uncertainties.
- a. In terms of air pollutant exposures, we believe that adequate scientific evidence does exist to conclude that current exposures to fine particulate matter present much greater health risks than ~~do current exposures to ozone.~~ That being said, we note that the use of additional indicators in CalEnviroScreen for diesel PM concentrations and traffic density addresses this issue in an indirect manner.
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January 23, 2013

Thank you for your consideration of these comments. If you have any questions regarding this letter, or would like to discuss, please contact Brian Bateman, Health & Science Officer (415-749-4653, bbateman@baaqmd.gov).

With regards,


Jack P. Broadbent
Executive Officer/APCO