RESPONSES TO MAJOR COMMENTS ON THE CALENVIROSCREEN 3.0 PUBLIC REVIEW DRAFT

The Office of Environmental Health Hazard Assessment (OEHHA) and the California Environmental Protection Agency (CalEPA) released a public review draft of the California Communities Environmental Health Screening Tool Version 3.0 (CalEnviroScreen 3.0), on September 6, 2016. Public comments were received at several workshops held in different parts of the state and through written submissions. The table below summarizes the major comments received and OEHHA's responses. Comments have been paraphrased and grouped into broad categories. The final version of CalEnviroScreen 3.0, which was released in January 2017, reflects changes based on comments received. The report and results are available at https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30.

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1	Climate change and climate vulnerability	Incorporate variables that measure vulnerability to climate change impacts such as sea level rise, areas prone of sea level rise and the urban heat island effect. Draft CES3.0 lacks a measure of climate impact making it ill equipped to implement AB 197. Include indicators of climate change.	Currently climate change impacts or climate change vulnerability is not a component of CalEnviroScreen. Future work for later versions of the tool will consider this issue.
2	Environmental Effects Indicators	Include an indicator of mines or abandoned mines. The Department of Toxic Substances Control (DTSC) has a mining activities and mine prioritization tool. Mercury contamination from mining (legacy contamination from Gold Country) should also be considered.	We share concerns about potential health and environmental impact of mines on nearby communities, especially in rural areas. There are several mines which are designated as Superfund or State Response cleanup sites that are included in the Cleanup Sites indicator. Mine runoff that results in contamination of streams and lakes is represented in the Impaired Waters indicator. We are also working with our state partners to further evaluate DTSC's abandoned mine lands data for possible incorporation into a future version of the tool.
3	Environmental Effects Indicators	Include the Environmental Justice Screening method's (EJSM) hazard proximity layer to hazards such as ports, rail yards and airports because there is significant literature that demonstrates that living in close proximity to the facilities	We have previously evaluated the hazard proximity layer in the EJSM analysis and opted not to include it. Numerous sources of pollution contained in that layer are captured as part of existing Pollution Burden indicators. For example, diesel particulate matter (PM) emissions from ports, rail yards, and airports are already included in the tool.

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		included in the layer negatively impacts health and quality of life.	
4	Environmental Effects Indicators	Consider proximity to oil and gas production and fracking sites.	We have considered data on oil and gas production activities. We included the full set of locations of produced water ponds from well stimulation activities into the Groundwater Threats indicator in CalEnviroScreen 3.0. At the time of the draft, only 30% of the data were available.
5	Environmental Effects Indicators	Other sources of air pollution: • Include the California Air Resources Board's (CARB) "Facilities of Interest" database. Concerned over AB 32 greenhouse gas facilities and California Emission Inventory Development and Reporting System (CEIDARS) facilities that emit more than 10 tons per year. • Include other small sites like auto body shops and plating facilities.	The "Facilities of Interest" dataset contains a wide diversity of facilities that need to be considered carefully prior to inclusion. Some "Facilities of Interest" in this dataset are small sources of air pollution that are likely to be missing from CalEnviroScreen, while other facilities may already be represented. We are currently working with CARB to acquire the most up-to-date data on these facilities and will continue to assess its suitability for incorporation into CalEnviroScreen. Some of the sites in the "Facilities of Interest", such as permitted hazardous waste storage facilities, are already included in CalEnviroScreen indicators. Additionally, we have added scrap metal recyclers, which were previously not in the tool, into the Solid Waste indicator.
6	Environmental Effects Indicators	The following sites were brought up in the workshops to verify whether they are included in any CalEnviroScreen indicators: • Exide in Los Angeles • Western Environmental in Mecca • Sites at the old Army base that have not been cleaned up in West Oakland • CalEnergy facility near Mecca, and the Ormat geothermal facility south of Heber in Imperial County • Sempra and InterGen power generation plants in Mexicali	OEHHA evaluated the listed sites or areas of concern and found these sites, except for the power generation plants in Mexicali, have been included in the tool as an active facility, a cleanup site, or groundwater cleanup. Although OEHHA included Mexican facilities with toxic releases within 49 kilometers of the border, the Sempra and InterGen sites did not have any reported releases in the Mexican database. OEHHA will evaluate whether these type of facilities could be included in an environmental effects indicator in future versions of the tool if they are in close proximity to the border.

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7	Environmental Effects Indicators: Buffers	Buffers for environmental effects indicators: • Consider expanding environmental effects buffer distance in general to greater than 1000m. • For indicators that use a multiple ring buffer to evaluate proximity, instead of using fixed adjustment factors use an inverse distance squared relationship (1, .25, .11, and .02.) because the current method does not decrease strongly enough with distance.	Buffers are applied to facilities or sites in the Environmental Effects indicators because of uncertainty regarding their spatial extent and the degree of impact associated with distance. For many facilities in CalEnviroScreen, the exact perimeter is unknown for the majority of sites or facilities in these indicators. The buffer also allows a site to contribute to the score of a census tract that is close in proximity. There is very limited quantitative data on the relationship between distance to each site type and potential impact. The one-kilometer buffer with the proximity adjustment described in the report was viewed as a reasonable default distance. We have changed the distances when information from relevant CalEPA boards and departments supports the use of different buffer distances, or when scientific studies suggest departing from the default distances. For example, large water bodies in the Impaired Water Bodies indicator have a larger buffer. In the final version of CalEnviroScreen 3.0, we have also increased the buffer distance for composting facilities to two kilometers based on public comments and discussions with CalRecycle regarding odor complaint information.
8	Environmental Effects Indicators: buffers	The 1000-meter buffer for some hazardous waste facilities is too small. Kettleman City is an example. OEHHA should reevaluate the 1000m data limitation and consider expanding it to include facilities located more than 1000m from populated census tracts, communities close to or within hazardous waste transportation routes, and communities that might be affected due to wind patterns.	We have evaluated the approach to buffer distances for hazardous waste facilities, but are not making a change at this time. The distance between the facility and the populated census blocks is calculated from the outer perimeter of hazardous waste facilities. This allows for better characterization of proximity to nearby census tracts. Incorporating additional information on the routes of transportation for hazardous materials or weather data for the facilities was not feasible for this version of the screening tool.
9	Environmental Effects Indicators:	By relying exclusively on GeoTracker for the groundwater threats indicator, you are missing non-point sources such	We acknowledge that the information that is currently included in the Groundwater Threats indicator does not include all types of sites or

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	Groundwater Threats	as failing septic systems or application of agricultural chemicals. Incorporate data on dairies and confined animal feeding operations (CAFOs) into the groundwater threats indicator or an environmental effects indicator because they result in groundwater contamination, generate waste and have air quality impacts. The Central Valley Water Board has ordered a monitoring and reporting program which requires groundwater monitoring of dairies.	facilities that may contribute to groundwater contamination. Additional data may be available on non-point sources of groundwater pollution and how these sources may affect groundwater. We will evaluate additional data for inclusion in a later version of the tool, and will work with the State Water Resources Control Board (SWRCB) to assess the relevance, quality and completeness of additional data on groundwater contamination.
10	Environmental Effects Indicators: Groundwater Threats	The groundwater threats indicator would better represent pollution burden if it were weighted to indicate which communities depend on imported water versus those that rely solely on groundwater for drinking.	Contamination of water that is used as a source of drinking water is one of the health concerns from the facilities and sites included in this indicator. There is also concern about other types of impacts even if an area does not use groundwater for drinking water, such as from vapor intrusion into residences. The Drinking Water Contaminants indicator is intended to reflect a measure of chemicals in drinking water as a result of groundwater and surface water contamination.
11	Environmental Effects Indicators: Groundwater Threats	Incorporate underground storage tank (UST) data from the California Environmental Reporting System (CERS) website to ensure that current and accurate UST data is utilized into CalEnviroScreen.	SWRCB's Geotracker database is the most accurate and current source of information on leaking underground storage tanks. Underground storage tanks that have not been identified as leaking are not included in the indicator.
12	Environmental Effects Indicators: Hazardous waste	For the hazardous waste indicator, you should consider history of compliance and violations and how well companies are getting rid of hazardous waste.	We will consult with DTSC to review compliance and violation data for permitted hazardous waste storage facilities to see if it can be incorporated into future versions of CalEnviroScreen.
13	Environmental Effects Indicators: Hazardous waste	Include both large and small generators of hazardous waste.	DTSC was consulted in determining the make-up of the generators included in the Hazardous Waste indicator. In the current version of CalEnviroScreen, generators that produce a

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			small amount of less-hazardous (non-RCRA) waste were not included. OEHHA will continue to evaluate the contribution of small sources of hazardous waste for possible inclusion in future versions of the tool.
14	Environmental Effects Indicators: Hazardous waste	Concern over grape stakes as a hazardous material being dumped (illegally) in the Coachella Valley.	Illegal dumping is taken into account in the Solid Waste Site and Facilities indicators to the extent data is available in CalRecycle's Closed, Illegal, and Abandoned sites database.
15	Environmental Effects Indicators: Impaired Water Bodies	The Impaired Water Bodies indicator should reconsider its calculation of pollutants and should take impaired surface flow into account because this affects the availability of the water resource.	Data on impaired water bodies and associated pollutants comes from the Integrated Report and 303(d) list by SWRCB. A count of pollutant impairments for the segments provided a simple way to measure the magnitude of contamination present in water bodies across the census tracts. The indicator does not include surface flow impairments as they relate to the accessibility of water. However, if ongoing reduced surface flow has resulted in higher concentrations of contaminants that result in impairments, these impairments would be reflected in the indicator. Additionally, SWRCB does not have accessible data on the types of beneficial uses per water body, which would be necessary to better characterize the pollutants' impacts on people.
16	Environmental Effects Indicators: Impaired Water Bodies	The New River, which flows through Calexico, is extremely polluted. Would like to be sure that the tool is capturing the issues around it. Nearby residents experience rashes, asthma, pneumonia, heart problems and cancer and there are schools near the river. Near the New River, people are suffering from asthma more than the map shows. People here suffer from allergies, rashes, and are exposed to many pollutants from the New River.	The New River is included as an impaired water body in CalEnviroScreen and the census tracts in Calexico bordering the New River score among the highest in the state for this indicator. The pollution indicators do not predict health outcomes; however, we have included indicators of asthma and cardiovascular disease to represent sensitive populations based on health conditions. In the area near the New River, the rate of emergency department visits for heart attacks is relatively high.
17	Environmental Effects Indicators:	The Impaired Water Bodies indicator should capture impacts of people entering	We acknowledge the importance of sustenance fishing for some communities in California and that residents of these communities do not

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	Impaired Water Bodies	polluted areas and then spreading the impacts once they return home. For example, people traveling to the San Francisco Bay, fishing, and then returning home to feed their family the fish.	always live in close proximity to the waters from which they fish. However, a statewide assessment to account for these communities, the extent to which they fish, and where they may travel to and from is not currently within the scope of this tool.
18	Environmental Effects Indicators: Solid Waste	Solid waste sites without a valid latitude and longitude or unrecognizable address were excluded from the analysis. Could these be added?	Most solid waste sites (99%) now have location data and are mapped in CalEnviroScreen. We will work to eliminate gaps due to missing location data on an ongoing basis and hope to continue improving location data across all indicators over time.
19	Environmental Effects Indicators: Solid Waste	Include industrial recycling facilities into the Solid Waste indicator.	Scrap metal recyclers are not contained in the Solid Waste Information System maintained by CalRecycle, however we have extracted information on scrap metal recyclers from DTSC's Hazardous Waste Tracking System. We have included them in the Solid Waste Sites and Facilities indicator in the final version of CalEnviroScreen 3.0. A total of 314 recyclers that were active between 2013 and 2015 are now included in the indicator and given a score of "5," the same as solid waste transfer/processing sites.
20	Environmental Effects indicators: Solid Waste	Increase the weight of the score given to composters in the Solid Waste indicator, as currently they are weighted less than traditional landfills but still greatly impact the local community.	In CalEnviroScreen 2.0, composting facilities did not contribute to a census tract's score if they are located more than one kilometer from any of the census tract's populated census blocks. We have reviewed the comment with CalRecycle and, for CalEnviroScreen 3.0, we have increased the maximum buffer distances between populated census blocks and composting facilities from one to two kilometers. This is intended to account for potential impacts due to odors to communities located at distances beyond one kilometer.
21	Exposure Indicators	Concerns over lead in drinking water, lead dust and paint from old housing, soil contamination. Include an indicator of lead poisoning.	Lead is included as a contaminant in the Drinking Water Contaminants indicator if it tested and reported by a public water system or if it is present in the groundwater of areas that are not served by public water systems. However, data on lead contamination as a result of lead pipes in the home is not available statewide.

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			Lead has been identified as a contaminant at many cleanup sites that are in the Cleanup Sites indicator.
			OEHHA has evaluated an indicator of the age of housing as a proxy for lead in homes, however we have not found it to be a suitable indicator as this information does not take into account whether a home has been renovated or updated. Other information on blood lead testing are not publicly available and not conducted statewide.
			For future versions of the tool, OEHHA will evaluate whether an age of housing indicator could be improved or if data on blood lead testing could be accessed.
22	Exposure Indicators: Border	How do you model and consider air pollution entering the US from Mexico due to tire burning, trash burning, and other activities?	We do not have data on any of these activities at this time, except to the extent these types of emissions are captured by existing air monitoring stations near the border.
			There are currently two border community air studies occurring in San Ysidro in San Diego County and Imperial County. Each study has deployed a network of community air monitors that may capture air pollution impacts from Mexico. OEHHA hopes to use air quality data generated from these two studies to improve air quality indicators in CalEnviroScreen.
			Additional information on these two studies can be found at the links below:
			• San Ysidro: Air Quality and Border Traffic Study http://deohs.washington.edu/san-ysidro-air-quality-and-border-traffic-study
			• Imperial County Community Air Monitoring Project http://www.cehtp.org/page/imperial_coun ty
23	Exposure Indicators: Border	Should consider using US-Mexico border wait time as an indicator of traffic congestion. Traffic is heavy and wait time is long at the border. OEHHA should also review two studies regarding air quality at the border. One was finished in April 2015 and is publicly	The San Ysidro and Otay Mesa census tracts rank at the hundredth percentile (highest) for the Traffic Density indicator following the inclusion of traffic volume from both border crossings and parallel roads within 150 meters south of the California-Mexico border. The Calexico census tracts also show higher traffic density following border crossing traffic volume adjustments. Traffic volume for parallel roads

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		available and the other is an ongoing study in collaboration with Caltrans and has economic impact integrated.	were only available for San Ysidro and Otay Mesa census tracts. OEHHA is aware of the *Vehicle Idling Emissions Study at Calexico East and Calexico West Ports-of-Entry* study released in October 2015. OEHHA has reviewed the study but did not identify a clear way to integrate the data into the current methodology used for CalEnviroScreen. However, OEHHA welcomes specific recommendations, if provided.
24	Exposure Indicators: Border	Have you modeled the percent of PM that arises from diesel PM in the US-Mexico region? It should be accounted for in the model.	We have not modeled this, but we hope to use data generated from a two-year study that OEHHA is conducting at the California border community of San Ysidro to inform possible adjustments. OEHHA is not aware of any other air monitoring studies that are evaluating the percent of particulate matter that arises from diesel PM. OEHHA is open to suggestions for adjustments regarding how the source attribution information for PM can be integrated with CalEnviroScreen methodology for the PM2.5 and/or Diesel PM indicators.
25	Exposure Indicators: Border	Appreciate inclusion of sources of pollution in Mexico.	Comment noted.
26	Exposure Indicators: Border	Was past data from the now-closed air-monitoring site at Otay Mesa considered in the diesel PM indicator? Also, the decision to not adjust upward the diesel PM estimates at Otay Mesa should be assessed further.	CARB provides OEHHA with diesel PM emissions data for CalEnviroScreen. CARB estimates emissions from their on-road and off-road emissions inventory, so it does not include measures of pollutant levels in air. However, a nitrogen oxide (NOx) monitor located in Otay Mesa was evaluated for CalEnviroScreen 3.0 and indicated no need for adjustment of the emissions data. (NOx is considered a surrogate for diesel PM. See response to next comment.) If data is made available in the future indicating a need for an adjustment at Otay Mesa, OEHHA will review it.
27	Exposure Indicators: Border	Diesel PM: • Provide additional details on the diesel modeling and how it is different from CalEnviroScreen 2.0.	In CalEnviroScreen 2.0, OEHHA calculated the kilograms of Diesel PM that would be emitted at the California-Mexico border crossings to account for additional Diesel PM emissions from idling commercial trucks waiting in Mexico

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		How was PM2.5 and diesel PM exposures near the Tecate port of entry accounted for?	to cross into the US. The San Diego Association of Governments (SANDAG) has estimated that each day, on average, approximately 2,400 trucks cross in Otay, 832 in Calexico East, 151 in Tecate and less than 1 in Andrade. Tecate and Andrade were excluded from the adjustment due to the minimal rate of truck crossings. Otay and Calexico East emissions were estimated based on daily truck count, and fixed assumptions regarding the idling time and emission rates per truck. The following equation describes the relationship:
			Daily emissions of DPM = (number of trucks/day) × (time idling in hours) × (rate of DPM emission per hour idling)
			For CalEnviroScreen 3.0, CARB developed an alternative method to adjust DPM emissions estimates at the border. This adjustment is based on findings that measured concentrations of nitrogen oxides (NOx) can be used to estimate DPM concentrations. Estimated DPM concentrations from NOx monitors located in Imperial and San Diego county were compared to estimated DPM emissions used in CalEnviroScreen. There are two NOx monitors along the California-Mexico border located at Calexico and Otay Mesa and adjustments were determined for those locations. This method indicated that DPM concentrations in Calexico were underestimated, and these estimates were adjusted upward. No adjustments were needed for Otay Mesa. However, there is no NOx monitor located at Tecate and no PM2.5 monitor located at Tecate.
28	Exposure Indicators	Consider integrating community air monitoring into future versions of CalEnviroScreen.	OEHHA is currently conducting a community air monitoring study in San Ysidro and expects to evaluate the results for potential inclusion in a future version of CalEnviroScreen. There are other similar efforts to collect community air monitoring data and we are hopeful that together these studies may provide a framework for inclusion in other places in the state.

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29	Exposure Indicators	Include impacts as wildfires or an indicator of PM10 to address wildfires. Include measures of PM10 from smoke particles, fugitive dust and other respirable particles in the 2.5-10μg range that are not captured within PM 2.5 but are known to carry chemical and other pollutants harmful to human health. This data could be collected using satellite data where necessary.	We agree that exposures to particulate matter and air toxics from wildfire smoke pose potentially significant health risks, particularly if exposure is prolonged. Wildfire smoke can contribute to regional particulate air pollution. To the extent that smoke generated from wildfires persists in areas, this may be reflected in the long-term average PM2.5 levels detected through the air monitoring network in different parts of the state. However, there are significant challenges to including impacts from wildfires. While information is currently available to describe where wildfires have occurred in California, the impacts from smoke can be more widely distributed and are dependent on weather conditions and terrain. We are not aware of data (outside of the ongoing air monitoring) that can adequately describe the places affected by wildfire smoke across the entire state. We intend to explore possible options to include impacts from fires in the next version by collaborating with other agencies that have the expertise and data.
30	Exposure Indicators	Consider noise pollution as well as noise pollution from goods movement.	The Solid Waste indicator includes information on whether facilities have noise violations in the calculation of the score. If data are available for other types of facilities, OEHHA may consider including noise as a contributor to the scores in other indicators.
31	Exposure Indicators: PM 2.5	The PM2.5 values in CalEnviroScreen are not refined enough to change significantly based on proximity to heavily trafficked roadways. OEHHA should invest in more granular air monitoring and modeling.	The PM2.5 indicator is included to represent impacts to regional air quality from this pollutant. CalEnviroScreen accounts for heavily trafficked roadways through the Traffic Density indicator. As mentioned in a previous comment, OEHHA will be looking into the results from two community air studies along the US-Mexico border in order to inform how the air quality indicators in CalEnviroScreen can be improved.
32	Exposure Indicators: Diesel PM	Concerned about the decision to change diesel particulate matter measures to only calculate estimates for those census blocks within census tracts where people are living. Since	The decision to modify the Diesel PM analysis to an area-weighted calculation of populated blocks was based on concerns that non-populated areas could be affecting the diesel score for a given census tract. Some census tracts, especially rural ones, contain large

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		diesel contamination is airborne and easily moves between census blocks, it seems reasonable that areas even where no human populations live should be added into this calculation.	unpopulated areas of land with low rates of diesel PM emissions. In CalEnviroScreen 2.0, these unpopulated areas were considered in the area-weighted census tract calculation. In some cases, the tract area was a greater determinant of the Diesel PM score than the diesel emissions in populated areas. For CalEnviroScreen 3.0, we evaluated whether sensitive land uses, such as the presence of schools and hospitals, were excluded from populated census blocks, and if this exclusion significantly altered the diesel PM score in census tracts. We found most schools and hospitals were within or very close to populated census blocks, and therefore are still represented in the new area-weighted approach.
33	Exposure Indicators: Diesel PM	Are there any measures for Reactive Organic Gases (ROG) or nitrogen oxide (NOx) emissions from trucks in the diesel PM indicator?	We do not include measures of ROG or NOx in the tool, but the ozone indicator indirectly accounts for ROG and NOx as precursors to photochemical smog. Concerning diesel PM, NOx air monitoring data from San Diego and Imperial County were used to adjust the Diesel PM indicator in efforts to adjust for cross-border impacts.
34	Exposure Indicators: Diesel PM	Validate the spatial distribution of diesel PM with the South Coast Air Quality Management District's (SCAQMD) Multiple Air Toxics Exposure Study IV to make sure that on-road emissions are appropriately captured.	The timeline for completing CalEnviroScreen 3.0 could not accommodate such a validation exercise. However, OEHHA is interested in working with SCAQMD and other air districts in the state to validate the diesel PM indicator in a future version of CalEnviroScreen.
35	Exposure Indicators: Drinking Water	Water system boundaries data should be shared so that households and regions may be accurately included.	The Drinking Water Contaminants indicator was developed using water system service area boundaries that are maintained by the California Department of Public Health (CDPH; see URL: http://cehtp.org/page/water/download) as well as a number of boundaries that were approximated based on well location data. Most of the boundaries used in the indicator are available from the CDPH website. The methodology to approximate the other boundaries is described in OEHHA's updated document *Methodology for A Statewide*

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			Drinking Water Contaminant Indicator that accompanies the release of the CalEnviroScreen 3.0 report. OEHHA has not yet created a public use data set that includes these service areas, but will consider ways to make this information available in the future.
36	Exposure Indicators: Drinking Water	Naturally occurring contaminants in drinking water should be weighted higher than contamination by other sources because naturally occurring contamination is harder to clean up.	The Drinking Water Contaminants indicator focuses on potential contaminant exposures primarily to those served by community water systems. For this reason, the analysis is limited to average contaminant concentrations in drinking water (and whether violations of drinking water standards have occurred). Contaminants may be introduced into drinking water sources in multiple ways, such as natural occurrence, industrial releases, and agricultural runoff.
37	Exposure Indicators: Drinking Water	More recent data may be more representative of current water quality.	We use 2005 to 2013 data because those years include the three most recent complete compliance cycles: 2005-2007, 2008-2010, and 2011-2013. Because of water quality monitoring requirements, we used use complete compliance cycle data so that there is better coverage of water quality testing data across drinking water service providers.
38	Exposure Indicators: Drinking Water	Use a weighting scheme for drinking water contaminants that is based on the Maximum Contaminant Level (MCL) to Public Health Goal (PHG) ratio.	In the draft version of CalEnviroScreen 2.0, OEHHA considered a drinking water index that relied on the PHG. However, after public input was considered, the indicator was changed to a relative contaminant index based on the combination of multiple contaminant percentiles. The decision to change the index was made because several PHG values are below the detection limit for reporting, particularly for carcinogens, which made interpretation of values difficult when no contaminant is detected. Ranking each contaminant individually before combining into an overall contaminant-based score also allows more rapid identification of which contaminants are driving the score. Based on an in-depth analysis of the drinking water scoring for CalEnviroScreen 2.0, we have decided to continue to use this method.

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39	Exposure Indicators: Drinking Water	Long-term drinking water degradation in tribal communities should be recognized.	OEHHA will continue to inquire whether data from tribally-owned drinking water systems can be accessed to improve the characterization of drinking water quality in tribal communities in future versions of CalEnviroScreen.
40	Exposure Indicators: Drinking Water	Drinking water scarcity should be included in the drinking water indicator.	We will consider this issue for future versions and are looking into the availability of reliable data and methodology to characterize water scarcity, water access, or related infrastructure.
41	Exposure Indicators: Drinking Water	Comments on the drinking water indicator methodology: • The draft CalEnviroScreen 3.0 does not explain the methodology that was used to approximate boundaries. • How are changes in reporting levels incorporated into the indicator? • How is imported water accounted for? • Rationale for including selected contaminants should be explained - not just nitrate, perchlorate and arsenic.	Since this indicator has many complex steps and multiple data sources, OEHHA has created a separate technical document that explains the drinking water indicator methodology in more detail. Please see this technical document, which answers these questions, at the bottom of this OEHHA website: http://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30. The contaminants mentioned in the rationale are examples of research on contaminants, but the approach to the selection of contaminants that are included in the analysis is further described in the Drinking Water Contaminant Metric Calculation in the supplemental technical document.
42	Exposure Indicators: Ozone, PM2.5	Add an adjustment factor for area-based emission rates due to regional differences in pollutant dilution. Estimates could be made from concentrations of surrogates like black carbon (diesel PM) or NOx (traffic).	Comment noted and provided to CARB to consider such an adjustment in future versions of CalEnviroScreen.
43	Exposure Indicators: Ozone, PM2.5	Include a map of the air monitoring sites so that gaps in monitoring can be identified.	We plan to add the locations of air monitors that are included in CalEnviroScreen to the online maps of the ozone and PM2.5 indicators.
44	Exposure Indicators: Ozone, PM2.5	Include all bordering states' air monitoring data, not just Mexico.	We sent this suggestion to CARB, from whom we obtained the air monitoring data. OEHHA and CARB will look into whether there are significant air pollution concerns in areas of other states bordering California and the possibility of obtaining air-monitoring data

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			from neighboring states, if suitable, to adjust the model.
45	Exposure Indicators: Ozone, PM2.5	OEHHA needs to review the spatial scale for which each California Air Resources Board air quality monitor is rated and reduce the radius of presumed accuracy based on these ratings.	We recognize that the state's air monitoring network is limited with respect to its ability to characterize local air quality. The estimates that are currently derived from these monitors were established by consultation with CARB. OEHHA will continue to work with CARB to collect, model, and determine the accuracy of air quality data in California. In time, we hope that additional air monitoring, such through the deployment of more low-cost air monitors, will provide information such that exposures can be more accurately incorporated based on data at a more refined scale.
46	Exposure Indicators: Pesticide Use	Instead of using a percentile ranking for pesticides, make the scale the percentage of statewide maximum application. This would better distinguish areas that have the most applications, and further them from other areas with a small amount of application.	While the percentile approach may limit the ability to build in the magnitude of differences for indicators, having a standardized scoring approach for all indicators is an important consideration in building a tool for estimating the cumulative impacts of multiple pollution sources, which is the primary objective of the tool. Currently the calculation of percentile scores for each indicator provides a readily understood way of communicating how each census tract scores for a given indicator.
47	Exposure Indicators: Pesticide Use	Expand the Pesticides indicator to include low volatility but highly toxic pesticides that adhere to soil particles, result in exposure through dust inhalation. All pesticides listed under Proposition 65 as known carcinogens or reproductive toxins or pesticides associated with elevated rates of Parkinson's disease in studies should be added to the tool.

Specifically add paraquat, maneb, mancozeb, propargite, iprodione and captan to the pesticide use indicator. | The high volatility and high toxicity criteria for the pesticide use indicator represent compounds with higher potential for human exposure. All pesticides on the Proposition 65 list that meet the volatility criteria are included.

Although we agree there is some concern for the specific pesticides listed in the comment, these pesticides make up only a small fraction of the pesticides in the indicator. In 2014, paraquat, maneb, mancozeb, propargite, iprodione and captan made up a small percent of the total agricultural-use pounds of the highest used pesticides in the pesticide use indicator. The addition of these pesticides would produce relatively small changes in results. Nevertheless, we will consider expanding the criteria for inclusion of additional pesticides in future updates of the tool. |

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48	Exposure Indicators: Pesticide Use	Account for urban pesticide exposure in the pesticide indicator. Concern over the indicator being skewed because nonagricultural use is not included. The Department of Pesticide Regulation has some data on nonstructural pesticides, explore the option of inclusion. CARB and some air districts are able to estimate urban pesticide use as part of their inventories.	We believe that incorporating the non-agricultural and other agricultural uses of pesticides would improve the indicator. However, only county-scale data for non-agricultural uses is available, and we have not identified a suitable method to allocate the use of these pesticides to the census tracts within counties. Non-agricultural pesticide uses are more likely to occur in residential and commercial environments, while other agricultural uses (non-production) are more likely to occur in non-residential environments (parks, roadways, etc.). While there may be ways to evaluate the allocation of these types of pesticide use, they are not readily available and would take additional time and resources to develop. We will work with the California Air Pollution Control Officers Association and the Department of Pesticide Regulation to determine pesticide data availability in urban areas, and if found suitable, this information may be included in the next version.
49	Exposure Indicators: Toxic releases	The Toxic Releases from Facilities indicator data should be expanded to include releases to land and water as well as include data from smaller facilities.	Toxic releases to air pose the greatest concern as they can be released in large quantities, travel long distances, and impact many people. The US EPA's Risk-Screening Environmental Indicators (RSEI) model, used for the indicator, does not model releases to land, and these releases are not indicative of direct exposure to people. OEHHA found the RSEI-modeled releases to water were not as well developed with respect to their spatial distribution for inclusion in the Toxic Releases indicator at this time. Some releases to land and water are included in the Groundwater Threats and Impaired Water Bodies indicators. Other indicators of water quality as it relates to potential human exposure, such as our indicator of drinking water quality, do account for drinking water contaminants throughout the state.
50	Exposure Indicators: Toxic releases	More accurate Toxic Release Inventory (TRI) data can be retrieved from other sources such as the California Emission	The comprehensive modeling approach used in RSEI provides a complete geographic coverage of estimated toxic release concentrations across California. We believe that this is

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		Inventory Development and Reporting System (CEIDARS).	currently the best available data source for this indicator. We are looking into incorporating small sources of air pollution listed in CEIDARS that are not covered by TRI for future updates of CalEnviroScreen. Many of the emissions of air toxics from facilities that are reported in the CEIDARS database are only required to be updated at least every four years. This is a limitation in reliably characterizing the current conditions in the community.
51	Exposure Indicators: Traffic	Would like to confirm whether county roads are included in Lake County, or if it is only from the CalTrans highway numbers in the traffic indicator.	We have confirmed with the California Environmental Health Tracking Program, who performed the traffic analysis, that in addition to highways, some local roads in all California counties have been included in the calculation. Specifically, local roads in Lake County were used.
52	Exposures Indicators: Ozone	Ozone: recommends going back to the version used in 2.0 (portion of ozone above the standard) as a threshold.	Based on the feedback we received, we chose not to continue to use the threshold. This change was made to provide a more meaningful score for those communities that may experience ozone concentrations just below the state standard.
53	General comment	Request that this process of creating a final version of 3.0 be slowed down. Otherwise, OEHHA needs to redefine the mission of the CalEnviroScreen tool removing any mention of environmental justice, and either create a separate more inclusive program incorporating environmental justice principles or allow these types of opportunities to be designed for application on a county by county basis.	We have made efforts to develop and update the CalEnviroScreen tool through a robust and meaningful public process. CalEnviroScreen was designed with an environmental justice focus, and this focus is not dependent on any timeline for finalizing Version 3.0. Local and regional jurisdictions are welcome to utilize the datasets from CalEnviroScreen and other sources and create their own designation or maps to suit their needs.
54	General comment	How will changes over time be tracked?	CalEnviroScreen is intended to compare pollution burdens and vulnerabilities among the state's census tracts using the most currently available data, and is not currently designed to track changes in environmental conditions over time. However, we agree that tracking changes over time is important and we will continue to explore options for developing

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			supplemental analyses to address this in the future.
55	General comment	Provide sensitivity and correlation analyses similar to what was done in CES 1.0 and provide documentation of the changing census tracts in the top 25%.	While correlations and sensitivity analyses are tools that are routinely used to examine relationships between indicators and different scores in CalEnviroScreen, at this time, we do not plan to create another document describing this type of result. However, we do make all the raw data and calculated scores for CalEnviroScreen 3.0 indicators publicly available such that any specific relationships can be examined by interested parties.
56	General comment	Add a feature to the tool to allow "groundtruthing" reports from community organizations as a way to connect impacts on the ground.	Community input has always been valuable in shaping the tool and we will continue to explore the feasibility and options for collecting additional information through "groundtruthing" from local communities. Public input and comments are welcome on the tool, especially if errors are identified. These can be submitted through the program's email at CalEnviroScreen@oehha.ca.gov.
57	General comment	Develop guidance and increase interactive training opportunities to government, academia, and the general public.	When requested, we have generally been able to provide in-person training to different groups and organizations. We are also in the process of finalizing a video tutorial that will be useful for people to watch on-line and learn about CalEnviroScreen and how to use it. This will be available through the OEHHA website at www.oehha.ca.gov.
58	General comment	CalEnviroScreen must not be used for California Environmental Quality Act (CEQA) and more specific guidance on what it should and should not be used for should be more clearly defined. Provide more discussion on limitations and uncertainties of the tool and appropriate uses including unsuitable use for CEQA.	As described in the report's *Message from the Secretary*, CalEnviroScreen is not a substitute for a cumulative impacts analysis under the CEQA. Other tools, or individual data layers, might be more useful for different purposes, such as for identifying communities facing socioeconomic disadvantage or health disadvantage. We continue to emphasize that CalEnviroScreen is not a health risk assessment. We expect to continue to work with CalEPA and other entities to develop and refine appropriate uses for the tool and the information that is contained in it.

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59	General comment	Urge OEHHA to establish a regular schedule for future updates to CalEnviroScreen so that communities can better anticipate and provide input. OEHHA should update CalEnviroScreen on a periodic basis.	Although there is no mandate to update CalEnviroScreen on a specific schedule, we expect to continue to update the tool regularly.
60	Model/ Scoring/ Weighting	Comments regarding the half-weighting of the Environmental Effects component: • Remove half-weighting of Environmental Effects. • Recommendation to analyze the possibility of giving full weight to the Environmental Effects indicators because many environmental justice communities consider Environmental Effect sites, like hazardous waste sites for example, to be significant burdens. • Weight the Environmental Effects equally to Exposure instead of the current half weight. Reasoning is that there is good location data for the Environmental Effects that capture the neighborhoods that are impacted by hazardous waste facilities and cleanups, while the exposure effects rely on monitoring networks that may miss these localized impacts.	This comment helped us to reevaluate the methodology for weighting the Environmental Effects indicators. We continue to believe that measureable potential exposures to pollutants from monitoring or emissions data, such as contaminants in air or drinking water, should contribute to Pollution Burden to a greater degree than the proximity to environmental threats. Hence, we have not changed the half-weighting of the environmental effects component. However, we have modified the method for calculating the individual component scores. The updated scoring method emphasizes and maintains a fixed level of contribution from individual components to the final CalEnviroScreen score, as opposed to the number of indicators within a component. This modified approach results in an increased contribution of the Environmental Effects component to the final score while retaining the half-weighting applied to this component.
61	Model/ Scoring/ Weighting	Evaluate CalEnviroScreen 3.0 by comparing with results from similar tools such as the Health Disadvantage Index put forth by the Public Health Alliance.	We have evaluated the Health Disadvantage Index and consider it a useful tool for measuring aspects of health disadvantage in California. For the purposes of CalEnviroScreen, we still believe that the CalEnviroScreen method of combining different indicator data sets in a uniform manner is better suited as an environmental justice tool which evaluates pollution and population

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			vulnerability cumulatively across California communities.
62	Model/ Scoring/ Weighting	Comments on weighting indicators: • Further research to weigh different indicators based on their magnitude of impact, where possible, all indicators should be weighted based on their actual impact on populations within a census tract by following the example of the population-weighted indicators, instead of their impact on the geographical area within census tracts. • Suggestions on Exposure indicators: The weight of the different indicators can be an issue. Ozone is less toxic than PM2.5 but weights the same; Toxic Releases should be weighted higher than air exposures; Ozone, PM2.5, and Diesel PM are weighted the same when PM2.5 and Diesel PM are more of a health hazard.	Due to the complex nature of cumulative exposures and community vulnerability, determining the relative impact or weights that each indicator contributes is challenging. CalEnviroScreen is a place-based screening tool, and does not represent a measure of health risk. It describes the total burden from multiple sources of pollution and the vulnerability of the population living in the area through a suite of indicators that are each scored individually. Presently, we have applied a relatively simple weighting scheme in combining information from the different indicators included in the tool. We expect to continue to evaluate weighting of indicators and how possible changes in the future are likely to further the objectives of the tool to identify cumulatively impacted communities in California.
63	Model/ Scoring/ Weighting	Concern over the double and triple counting of certain indicators and the use of multiple socioeconomic factors as separate indicators despite them all being linked to poverty. Have spatial statistical processes been completed to confirm that the indicators are not duplicative? Are they statistically different in their current distribution? Is there a correlation analysis examining the extent to which multiple indicators are effectively measuring the same phenomena?	Each of the CalEnviroScreen indicators makes a unique contribution to the overall CalEnviroScreen score. For example, Ozone and PM2.5 indicators represent regional air quality while Diesel PM and Traffic Density indicators represent more localized pollution burdens from specific types of sources. While both the diesel and traffic indicators contribute to some degree to regional air quality, the documented high levels of exposure and localized impacts justify their inclusion as separate indicators. Further, disadvantaged communities are often located close to high traffic corridors and in places with relatively high diesel exhaust emissions, such as ports and railyards. Many facilities in California have activities related to multiple indicators in the tool and

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			therefore are represented in multiple indicators.
			While there are correlations between some of the socioeconomic indicators, they have all been included in CalEnviroScreen to capture different aspects of vulnerability that may be missed by limiting their number. The CalEnviroScreen scoring approach has been slightly altered to emphasize the contribution of the four components to the CalEnviroScreen score. This change minimizes the effects of overlaps and correlations among indicators; for example, the scores of each of the Socioeconomic Factors indicators and each of the Exposure indicators are averaged to come up with a single Socioeconomic Factors score and single Exposures score for each census tract. The process of averaging indicators across the components also helps minimize potential impacts of double counting.
			Other Population Characteristics indicators such as low birth weight and the rate of asthma emergency department visits do not correlate strongly with all socioeconomic indicators but are representative of a community's health and vulnerability.
64	Model/ Scoring/ Weighting	Census tracts that are scoring high for a few but not many indicators are overlooked irrespective of how high some scores are. Scoring method identifies some types of disadvantages, but requires too many criteria to be met and excludes communities in the Bay Area.	The tool is intended to identify places facing burdens from multiple pollution sources and factors, not to capture places facing high burden in just one or two of the pollution or vulnerability indicators of the tool. However, many of the extreme conditions are captured at the highest percentile levels. Locations with acute or extreme exposures for several indicators are likely to score more highly in the tool. In the final version of CalEnviroScreen 3.0, additional communities in the Bay Area are identified as high scoring.
65	Model/ Scoring/ Weighting	Do not multiply Pollution Burden and Population Characteristics scores as it is causing a problem and reduces the impact of population score. Preference to add indicators rather than multiply, similar to	Socioeconomic issues and health status of an exposed population can serve as effect modifiers to some of the risks posed by environmental pollutants. This can amplify the risk of exposure to pollutants and we believe a multiplicative approach is suitable. In addition, a multiplicative method is often used in epidemiologic assessments and risk

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		the Environmental Justice Screening Method (EJSM).	assessments when evaluating associations between exposures and potential health effects. We have reviewed the scientific literature and found relationships between socioeconomic factors, pollutants, and health outcomes that support this approach. Using a multiplication method does not reduce the impact of the population vulnerability indicators.
66	Model/ Scoring/ Weighting	Comments relating to increasing the weight of Population Characteristics indicators: • Increase the weight of socioeconomic indicators relative to pollution indicators. • Concern over insufficient inclusion of socioeconomic indicators of income, education and employment. • There should be a greater emphasis on the socioeconomic and sensitive population indicators. • Poverty should be weighted more. Include social and economic factors as independent contributors to disadvantaged communities and in addition to being modifiers of pollution burden.	CalEnviroScreen is an environmental health screening tool that estimates pollution burdens in individual communities as well as a community's vulnerability to pollution's health effects. The socioeconomic indicators are included as a component of community vulnerability to pollution. Each of the socioeconomic indicators were selected based on scientific evidence showing that communities with those characteristics may have an increased vulnerability to pollution. The tool was designed to emphasize the cumulative impacts of various sources of pollution and factors of vulnerability and therefore each of these components is weighted equally in calculation of an overall CalEnviroScreen score.
67	Model/ Scoring/ Weighting	Would like more clarity on the equation laid out to demonstrate reliability of data for demographic characteristics (education, linguistic, unemployment, income, rent-adjusted income). We are concerned that despite this calculation the underlying American Community Survey (ACS) data is still unreliable.	We understand the limitations of using ACS data. The method to establish the reliability of the data uses the information on the "margin of error" for each census tract's estimate provided by the Census Bureau. By taking into account the calculated relative standard error and eliminating estimates with large possible errors, we reduce the chance that a given indicator's measure is broadly mischaracterized. Census tracts with very high margins of error and relative standard error are excluded from the analysis.

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			By using the most updated 5-year ACS estimates and by having multiple indicators to capture the socioeconomic factors, we believe the unreliability of the data is minimized.
68	Model/ Scoring/ Weighting	Recommend using "product of ranks" scoring methodology for CalEnviroScreen. Move toward identifying communities burdened by top scores in population characteristics or top scores in pollution burden as outlined by SB 535. Let local regions decide how to apply CalEnviroScreen indicators and weights to identify disadvantaged communities. Supports the use of the alternate "product of ranks" method proposed by the Bay Area Air Quality Management District, or a similar system where high scores in enough indicators properly recognize communities as disadvantaged and worthy of investment.	OEHHA has not adopted this recommended change because it results in high scores for census tracts with a small number of high-ranking indicators and allows a small number of factors to drive final scores, which is inconsistent with the objective to identify communities facing cumulative impacts from multiple sources of pollution and vulnerability. In some cases, this ranking method could allow relatively affluent communities to be identified as disadvantaged. OEHHA is willing to work with Bay Area Air Quality Management District staff to evaluate the reasons for differences observed between CalEnviroScreen and the Rank-Product method. Should the ranking approach or another new scoring method be developed, there will be an opportunity for thorough public and scientific review prior to incorporating it into any future version of CalEnviroScreen.
69	Model/ Scoring/ Weighting	Environmental indicators should use a scaled value of exposure (Z-score) or a threshold value. Recommend a sensitivity analysis on the use of percentile ranking at the step of calculating scores for each individual indicator. CalEnviroScreen methodology does not capture the cardinal distribution that can vary widely from indicator to indicator. Concern over use of percentile scores for indicators rather than the normalized actual values.	OEHHA believes that for relative ranking of communities across the state, the percentile approach is best suited and easily understandable to a wide audience. The percentile approach allows us to make comparisons across multiple datasets with varying distributions and skewness. When developing the CalEnviroScreen model, a goal was to remove the skewness of the data by normalizing the data in order to combine them.
71	Other	Would like ability to see ZIP codes in addition to Census tracts, especially for health data.	The current version of CalEnviroScreen represents results at the census tract scale data. A large number of comments received on the first version of CalEnviroScreen (1.0), which scored communities by ZIP code, recommended using census tracts as the

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			geographic unit of analysis since it represents a somewhat finer scale than ZIP codes. The Excel spreadsheet of CalEnviroScreen 3.0 results that is available on the OEHHA website provides the approximate ZIP code corresponding to each census tract.
72	Other	Census and ACS data on housing conditions are not captured in sufficient detail to make them fully reliable, and ACS data on unemployment fails to capture seasonal unemployment. Inclusion of other data sources, such as local government data, could be used to supplement the Census data.	We recognize the limitations of the census and ACS data sets and have made efforts to remove estimates that are statistically unreliable from the analysis. Seasonal employment data are currently only available at the county scale. If seasonal employment data becomes available at a more localized level, we would look into the feasibility of using it in future versions of CalEnviroScreen.
73	Other	Commit to periodic review and develop an ongoing process for robust community and stakeholder engagement.	We have been following a robust, open, and public process from the beginning of this effort. We expect to continue this in future updates to CalEnviroScreen.
74	Regional Analysis	Regional analyses: • In addition to statewide rankings, publish and make available regional rankings. • Publish regional rankings on the CalEnviroScreen website to analyze and produce data on the top EJ communities from a regional perspective. • Would like to see regional versus statewide measures of data. The Bay Area Air Quality Management District has air quality modeling for the district but would need it for the entire state. • Regional ranking would help CalEnviroScreen be more objective. • OEHHA should consider doing regional rankings; see the Strategic Growth Council for examples of regional socioeconomic analysis.	CalEnviroScreen is designed for statewide scoring and comparisons and does not include data that are only available regionally. OEHHA does not currently have resources to develop regional analyses that would take region-specific data into account. The current tool is unsuitable for regional analysis, and indicators and scoring would need to be redesigned for this purpose. However, we make all the CalEnviroScreen data publicly available and others may use the datasets from this tool and other sources to create their own analysis to suit regional needs.

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		• CalEnviroScreen is a good statewide tool, but funds directed regionally should have regional analyses to allow a normalization of funds and allow for more equity in the region.	
75	Rural Communities	Separate out census block groups and census-designated places (many of which are unincorporated communities) from the larger census tracts that surround them, so that their particular vulnerability can be accurately represented.	We believe census tracts are currently the most useful scale of analysis for the CalEnviroScreen tool. Using census blocks groups, which are smaller than census tracts, and census-designated places would be difficult since comparison would have to be made with census blocks groups statewide. Further, some of the data used in CalEnviroScreen is either unavailable or statistically unreliable at the census block group scale.
76	Rural Communities	Concerns regarding how rural areas need to be factored more into the tool. Suggest OEHHA consider a separate tool for rural communities or tribal areas. Health indicators should be reconsidered to more accurately reflect reality in rural communities.	OEHHA aims to include indicators that are statewide and provide a measure of pollution burden or vulnerability to pollution for all types of California communities. Creating a separate tool for rural communities or tribal areas is currently outside the scope of OEHHA's activities given the needs for a statewide analysis. However, we will continue to explore refinements for future CalEnviroScreen versions that could provide improved estimates of pollution burdens and vulnerabilities in rural communities and tribal areas. We will continue to evaluate limitations in the methodology for the health indicators related to rural communities. We will continue to seek datasets that can more accurately characterize health concerns among sensitive populations in rural areas and other regions of California.
77	Sensitive Population Indicators	New indicators related to the built environment: • Access to parks (greenspace), park acreage per 1000 persons and open space as an indicator. Some communities have no access to computers, no sidewalks, no parks, and are near freeways.	The built environment is not currently a distinct component of CalEnviroScreen, but we will make an effort to explore and consider how the built environment could be factored into future versions of CalEnviroScreen.

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		• Walkability score. • Look at tree cover in urban areas. Explore inclusion of canopy cover, fruit trees. • Lack of access to healthy transportation infrastructure like walking and biking routes.	
78	Sensitive Population Indicators	Health indicators should be reconsidered to more accurately reflect reality in rural communities. OEHHA should consider including lack of access to health care facilities as an indicator based on medically underserved areas and health professional shortage areas. Include an indicator of lack of access to medical care. Add an indicator of proportion of doctors to number of people in population. There are not enough doctors or specialists in the Coachella Valley.	We agree that access to health care and health professionals is an important determinant of health and that rural communities may face challenges accessing health services. We evaluated the data on medically underserved areas and health professional shortage areas to determine whether they would be appropriate to use in CalEnviroScreen. Medically underserved areas are designated based on four criteria: the population to provider ratio for a given area, percent of the population below the federal poverty level, percent of the population over 65, and the infant mortality rate. Although this dataset has some useful information, we found the geographic unit that data was available was too large in many places. For example, in most rural areas, medically underserved areas are designated as counties, which is not a useful scale of analysis for CalEnviroScreen. CalEnviroScreen already includes indicators of poverty and the rate of low birth weight infants, a similar indicator to infant mortality. We will continue to explore whether data concerning medically underserved areas/ populations or shortages of health professionals could be incorporated into future versions of CalEnviroScreen at a useful geographic scale.
79	Sensitive Populations Indicator	Include an indicator of the location of food deserts	We agree that lack of access to healthy and fresh foods represents a type of vulnerability to California communities' health and socioeconomic wellbeing. Some studies suggest that people living in food deserts have an increased risk for obesity. The US Department of Agriculture provides a food desert locator at the following URL:

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			http://www.ers.usda.gov/data-products/food-access-research-atlas.
			At this point, we have not investigated how a measure such as proximity to supermarkets relates to both health and potential vulnerability to pollution, and whether the location of food deserts can be incorporated into a Socioeconomic Factors indicator or as an indicator of health status. We will continue our efforts to evaluate and consider this data in the future.
80	Sensitive Populations Indicators	New health indicators: • Include all-cause mortality or life expectancy in Population Characteristics indicators • Indicator of cancer • COPD is not covered by the asthma indicator. Would like to see COPD and other lung diseases. • Obesity, especially in children, should be included as an indicator. Data are available from schools and from Head Start. • Percentage of pregnant women within each census tract.	A number of additional measures of health have been proposed for incorporation into CalEnviroScreen. In evaluating potential new measures to represent sensitive populations, we look at evidence that the health endpoint represents a type of potential vulnerability to pollution. We also evaluate whether there are available data that can be reliably estimated at the census tract scale. As part of an ongoing process to refine the tool, we have evaluated some of the indicators suggested on this list, while some require additional research. For example, OEHHA proposed an indicator of cancer mortality in the draft CalEnviroScreen 1.0. However, we received feedback that cancer mortality is not a good indicator of health vulnerability and an indicator such as cancer incidence would be preferred. However, cancer incidence rates are not currently available at a small enough geographic unit due to confidentiality concerns. Obesity data is also only collected at the county scale across California. OEHHA has plans to calculate life expectancy by census tract to see if it would be a meaningful indicator. As for all mentioned health indicators, we will continue to see if there is available data and if there is scientific research to support their inclusion into the tool.
81	Sensitive Populations Indicators	Homelessness is getting to be a huge problem. They are a vulnerable population and also have environmental and social impact on those living in the	We acknowledge that homeless populations are a vulnerable population. Currently, we are not aware of any reliable data set to evaluate and address this topic. We will continue to search for reliable data in the future and

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		communities they are present in. We recommend adding homelessness as an indicator. Explain any gaps in data availability.	consider how it could be represented geographically.
82	Sensitive Populations Indicators: Age	Support for the elimination of the age indicator.	Comment noted.
83	Sensitive Populations Indicators: Age	Many comments to retain children/youth (comments suggest under 5, 10, or 18 as the indicator). Some comments to capture children in poverty. A few comments to capture the elderly, especially the socially vulnerable. Some concerns in the US-Mexico border region over elderly people that may not be captured by the cardiovascular disease indicator because they go to Mexico for care, as well as many elderly people living in the Coachella and Imperial Valleys.	A spectrum of views have been expressed on the topic of the vulnerability of people based on age. For the reasons explained in OEHHA's New in CalEnviroScreen 3.0 document, we are not including the age indicator in the calculation of the CalEnviroScreen score. Instead, we include information on the age distribution by census tract on the online map and will provide a supplemental analysis of age and CalEnviroScreen 3.0 scores in the future.
84	Sensitive Populations Indicators: Asthma	Childhood asthma rates would be a stronger indicator than the current indicator of overall asthma rates. The asthma indicator should only include data for childhood asthma (age 17 and under). Childhood asthma may be more relevant to disadvantage felt in a community.	Although children do represent a majority of emergency room visits due to asthma attacks, we believe it is important for this indicator to capture all vulnerable people in different age groups with asthma. We are not adjusting the asthma indicator at this time.
85	Sensitive Populations Indicators: Asthma	For the asthma indicator, recommends in the longer term that OEHHA collaborate with the California Department of Public Health, the California Health Interview Survey and State Health Systems to identify an asthma indicator that relies less on emergency medical care proximity.	We recognize the limitation relating to proximity to emergency medical care for the Asthma and the Cardiovascular Disease indicators. We plan to consult with other state and non-governmental organizations to explore alternative ways to measure asthma and cardiovascular disease in communities in future versions of CalEnviroScreen.

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86	Sensitive Populations Indicators: Asthma/ Cardiovascular Disease	Concern that not everyone can afford to go to an emergency department (ED). Concern that some people take their kids to the fire department for asthma attacks. The asthma and cardiovascular indicators leave out rural communities. Is there a better way to account for that? Suggestions to measure asthma and cardiovascular-related visits to community clinics, or other kinds of visits.	We understand that the rates of emergency department visits for asthma may be underestimated in areas with limited access to health care. In our analysis of census tract proximity to EDs, we found that 96% of census tracts are within 10 miles of the closest ED. However, we will continue to evaluate these concerns, but so far, we have not identified a way to adjust the rates with confidence.
87	Sensitive Populations Indicators: Asthma/Cardiovascular Disease	Concern over how military personnel and veterans may be either skewing the data or not included if they receive treatment at a Veterans Administration (VA) or Department of Defense (DOD) hospital.	VA, DOD, or any federal hospital is not included in the data from the Office of Statewide Health Planning and Development used to calculate the Asthma and Cardiovascular Disease indicators We evaluated the location and number of overall visits to the ED for the 10 VA hospitals and five DOD hospitals in California with EDs. We acknowledge that information on veterans using these hospitals for emergency services is not included in our estimates. The magnitude of the underestimation is hard to establish confidently. On average, people use an ED within seven miles of their residence. In urban areas, people use an ED within four miles. Most VA and DOD hospitals are located in urban areas and this suggests that estimates for rates of use of EDs in census tracts near VA and DOD hospitals may be affected. However, without specific information on patients using military or veterans hospitals, we cannot adjust the rates in these areas with confidence. OEHHA will investigate whether it is possible to obtain information on ED utilization for these hospitals for a future version of CalEnviroScreen.
88	Sensitive Populations Indicators: Cardiovascular Disease	Support for cardiovascular disease indicator.	Comment noted.

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89	Sensitive Population Indicators: Cardiovascular Disease	Expand discussion on why a cardiovascular disease indicator was included given lack of correlation to air pollution indicators.	This indicator is included to represent populations that are potentially susceptible or vulnerable to pollution in a community. In the case of cardiovascular disease, studies have shown a correlation of increased cardiovascular disease-related mortality in with levels particulate matter in ambient air.
90	Sensitive Populations Indicators: Low Birth weight	Exclusion of tracts with fewer than 100 live births during a seven-year period will exclude data from the most rural parts of California. OEHHA must explore options that would allow data from these areas to be included, such as lowering the number of live births.

In addition, exclusion of PO Box data from the low birth weight indicator disproportionately excludes data on farmworkers and other rural populations. | OEHHA evaluated the concern over the minimum number of births during the 7-year period, and reduced the number from 100 to 50 births based on the comment. This provides low birth weight infant rate estimates for an additional 222 census tracts since the draft version of CalEnviroScreen 3.0.

OEHHA also investigated whether there was higher PO Box use associated with births in rural areas. We found that the fraction of births with a PO Box or no address was higher for rural counties. However, most of the census tracts suppressed in rural counties have well below 50 live births over the seven-year period covered by the indicator. Therefore, even if births with a PO Box as an address were included, it is unlikely that it would bring the total number of live births over 50, the minimum needed for inclusion in the tool. |
| 91 | Socioeconomic Factors Indicators | Indicator suggestions related to transportation:
• Proximity or access to transportation should be considered.
• Incorporate transportation costs such as commute times or a proxy of mileage.
• Include access to transportation, car ownership, availability of public transportation.
• Include lack of access to transportation. | We recognize transportation access, costs, and commute times, as an important contributor to socioeconomic vulnerabilities. We are evaluating the transportation segment of The Center for Neighborhood Technology's Housing+Transportation Index. At this time, we have not determined how it could be applied or incorporated into CalEnviroScreen and would like to further understand the methodology. We will continue to explore and consider this tool as well as other options for future versions of CalEnviroScreen. |
| 92 | Socioeconomic Factors Indicators | Incorporate crime data. Add crime and/or prison/ incarceration as an indicator. | Although crime and incarceration are public health concerns, impose burdens on a community, and contribute to stress, we have not incorporated them in the tool at this time. We will continue to evaluate the types of data |

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			that are available related to crime and incarceration for future versions of CalEnviroScreen to see if they meet our criteria for indicator selection.
93	Socioeconomic Factors Indicators	New indicators related to school/education: • Average graduating GPA for students. • Student to teacher ratio. • Percent of students with English as second language. • Advanced Placement (AP) classes offered and successful completion rate of AP classes. • No jobs for young professionals/ no professional jobs. Ratio of blue collar versus white-collar jobs offered in the community?	We received many interesting suggestions regarding new indicators relating to school, education, and jobs. We will continue to evaluate many of these suggestions for future versions of CalEnviroScreen to see if they meet our criteria for indicator selection and if enough scientific research exists to support their inclusion.
94	Socioeconomic Factors Indicators	Suggestion to review the Social Vulnerability to Environmental Hazards Index developed by Dr. Susan Cutter at the University of South Carolina.	Thank you for sharing the social vulnerability index with us. We continue looking for ways to improve CalEnviroScreen. Although this social vulnerability index is estimated at the county scale, it will be useful to evaluate the variables used in the index, the calculation of the index, and its overall relevance to our tool and the assessment of vulnerability.
95	Socioeconomic Factors Indicators	Several commenters expressed their support for including the analysis of race/ethnicity and feel that it is very important. Other commenters expressed the wish for an indicator of race to be included in the tool.	CalEnviroScreen 1.0 included a race/ethnicity indicator, but this was later removed from the tool due to concerns that it could place legal barriers to certain uses of the tool by government agencies. As with previous versions of the tool, each census tract's race and ethnicity profile is provided in the popup window in the online maps. A supplemental analysis of race/ethnicity and CalEnviroScreen data will also be provided.
96	Socioeconomic Factors Indicators: Rent-adjusted income	Fix the rent-adjusted income indicator to be more consistent with established methods such as those from Housing and Urban Development (HUD).	We reevaluated the Rent-Adjusted Income indicator and compared it with the HUD's index as suggested. This resulted in substituting the Rent Adjusted Income indicator with an indicator of Housing Burdened Low Income

No.	Topic	Comment	OEHHA Response
		Specifically replace the rent adjusted income indicator with a measure of households facing low income and severe housing cost burdens from HUD's Comprehensive Housing Affordability Strategy (CHAS) data: Households earning less than 80% of the HUD median family income and paying greater than 50% income to housing. By using such a cost burden metric CalEnviroScreen would maintain consistency with other government agencies routinely using such cost burden data to assess housing and funding needs.	Households that is used by HUD and takes into consideration income, rent or mortgage, and utility costs. Information on how this new indicator is calculated is described in the report.
97	Socioeconomic Factors Indicators: Rent-adjusted income	Comments to incorporate transportation costs into the rent-adjusted indicator. Concern over transit costs being high in rural areas. Other comments that the rent-adjusted indicator should also include the cost of household utilities, and water and wastewater bills.	The new Housing Burdened Low Income Households indicator captures some of the concerns expressed by factoring in the cost of household utilities. We will continue to explore additional options for factoring in transportation in future versions.
98	Socioeconomic Factors Indicators: Rent-adjusted income	The rent-adjusted indicator should use more recent data, factor in cost of living and factor in homeowners as well as renters.	The new Housing Burdened Low Income Households indicator is a special analysis of census data by HUD (CHAS data) and lags one-and-a-half years behind the release of the American Community Survey data. The most recent CHAS data available is 2009-2013. This new indicator factors in cost of living by determining whether a household is low income by comparing it to a county-derived estimate of income, and the indicator considers both homeowners and renters.
99	Socioeconomic Factors Indicators: Rent-adjusted income	Comments commending OEHHA for including an indicator of housing cost impact in CalEnviroScreen.	Comment noted. While this indicator has been revised in the final version of CalEnviroScreen 3.0, we believe it offers substantial benefits over the version that was proposed in the September 2016 draft, such as taking into account costs other than rent/mortgage (utilities) and focusing on low-income residents.

No.	Topic	Comment	OEHHA Response
100	Socioeconomic Factors/Sensitive Populations Indicators	Indicator suggestions related to infrastructure or utilities: • Add an indicator that represents lack of infrastructure including potable water and sanitation. • Consider rates in bill, garbage (utilities). • Include condition of homes, vacancy rates. • Develop and include an amenities index. • Create an indicator of disadvantaged unincorporated community infrastructure needs.	We realize that there are many factors involved in a community's access to infrastructure and utilities. In the final version of CalEnviroScreen 3.0, the Housing Burdened Low Income Households indicator uses data from the Comprehensive Housing Affordability Strategy ("CHAS"), which incorporates utility expenses into their calculation for home costs. For future versions of CalEnviroScreen, we will continue to search for ways to incorporate lack of infrastructure.