

# THIRDHAND SMOKE Resource Center

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Thank you for the opportunity to comment on the Draft CalEnviroScreen 4.0.

We welcome the updates to the tool's 20 existing pollution and vulnerability indicators and recognize the importance of having "children's exposure to lead from housing" as a new indicator. We find, however, the updates do not acknowledge the significant contribution of tobacco product use to the pollution of outdoor and indoor environments throughout California. Therefore, we recommend you include exposure to tobacco pollution in CalEnviroScreen 4.0.

In the draft report, tobacco smoke is mentioned only once in the context of a study of pregnant women in Amsterdam (Netherlands). In that study, exposure to environmental tobacco smoke was more common among women with less education and associated with preterm birth, low birth weight, and small for gestational age of infants (van den Berg et al., 2012). Unfortunately, the draft fails to take into account decades of scientific research and multiple comprehensive reports of the U.S. Surgeon General on secondhand smoke risks.<sup>1-4</sup> The draft also fails to recognize decades of research funded by California's Tobacco-Related Disease Research Program within the University of California Office of the President, and a seminal 2006 report by California's Air Resource Board declaring environmental tobacco smoke a toxic air pollutant.<sup>5</sup> In addition, in 1997 the California Environmental Protection Agency reviewed the evidence on the health effects of environmental tobacco smoke exposure including the development of asthma, heart disease, sudden infant death syndrome, respiratory infections in children, lung cancer, and breast cancer.<sup>6</sup>

Here is a summary of the scientific evidence concerning the impact of tobacco products on the environment that is the basis for our recommendations for inclusion of tobacco in the updated CalEnviroScreen 4.0.

## **Indoor and outdoor air pollution from Secondhand Smoke (SHS)<sup>1,2,7</sup>**

- SHS is a significant source of PM2.5 pollution and exposure in indoor environments (e.g., multiunit housing)
- Tobacco smoke measurably contributes to ambient (outdoor) PM2.5.
- The California Air Resources Board classified SHS as a toxic air contaminant in 2006.
- SHS contains numerous carcinogens and reproductive toxicants as classified by Prop 65.
- Tobacco use and SHS exposure are highest in marginalized communities (e.g., low-income, low-education, communities of color) .
- According to the California Environmental Protection Agency, SHS is a Class A Carcinogen (causing cancer in humans) and is the second leading cause of lung cancer in the U.S.
- SHS is a causal factor for asthma, sudden infant death syndrome (SIDS), and low birth weight.<sup>8</sup>

### **Indoor dust and surface pollution from Thirdhand Smoke (THS)<sup>9-17</sup>**

- SHS is the precursor of THS, the chemical residue that remains for years in dust and on surfaces after smoking has stopped in indoor environments.
- SHS is a source of lead and cadmium pollution for indoor environments, and THS includes lead and cadmium in dust left behind by smoking indoors.
- THS residue is a toxic mixture of chemicals that have genotoxic and cytotoxic properties.
- THS contains numerous carcinogenic and reproductive toxicants, more than 20 of which are listed under Prop 65.
- THS persists in multiunit housing even after smokers move out, involuntarily exposing new residents to THS and disproportionately affecting disadvantaged communities.

### **Tobacco product waste pollutes water and outdoor environments<sup>18-21</sup>**

- Tobacco pollutants (i.e., nicotine, cotinine, tobacco-specific nitrosamines) have been found in groundwater supplies, downstream from water treatment plants, and in leachates from landfills
- Discarded tobacco products create waste in the form of cigarette butts, electronic cigarette pods and single-use products, leftover chemicals from electronic cigarettes, and lithium-ion batteries.
- Discarded electronic cigarettes and pods are considered hazardous waste by the U.S. Environmental Protection Agency.
- Cigarette butts are the single most abundant trash item collected from California's beach and urban environments.
- Toxic tobacco waste and packaging may accumulate on streets and parks as a public nuisance; it flows from streets into storm drains and eventually ends up in aquatic environments, including rivers, streams, marshes, and beaches. It may impact ecosystem services.
- The Trash Amendment to the California Clean Water Act requires that trash items larger than 5mm must be kept out of the storm drain system and so that it does not enter aquatic environments, including ocean water. Cigarette butts are larger than 5mm and must be prevented from entering the stormwater system.
- Nicotine, heavy metals, tobacco-specific nitrosamines (TSNAs), and other toxic chemicals leached from discarded cigarette butts can be acutely toxic to aquatic organisms and may bioaccumulate within the food chain.

SHS, THS, and tobacco product waste differentially impact marginalized and high-density neighborhoods. This impact results from tobacco's role as a social determinant of health that contributes to health disparities. Children are among the most vulnerable to the adverse effects of exposure to tobacco smoke pollutants; this exposure rarely occurs in isolation and is often accompanied by exposure to other environmental pollutants. In light of decades of scientific evidence on SHS risks, new evidence on THS exposure risks, and developing evidence on tobacco product waste impacts, we urge that the CalEnviroScreen 4.0 reflect the significant effects of tobacco use on disadvantaged communities in California.

The most efficient way to accomplish this is by recognizing tobacco use (i.e., smoking prevalence) as a Socioeconomic Factor Indicator:

#### **Population Characteristics: Socioeconomic Factor Indicators**

- Tobacco use is a social determinant of health: add community smoking rates as a new socioeconomic factor indicator

In addition, we recommend recognizing the contribution of tobacco use to the following already established Pollution Burden indicators:

**Pollution Burden: Exposure Indicators**

- Air Quality : PM2.5
  - add SHS in housing as a source of indoor PM2.5
- Drinking Water Contaminants
  - add tobacco-related carcinogens
- Children’s Lead Risk from Housing
  - add children’s exposures to SHS and THS

**Pollution Burden: Environmental Effects Indicators**

- Impaired Water Bodies
  - add tobacco product waste and toxic chemicals

To include tobacco-related exposures and impacts in the new draft of the CalEnviroScreen, we urge you to capitalize on data sources used by the Centers for Disease Control and Prevention to model health behavior (e.g., <https://www.cdc.gov/places/>), the California Tobacco Control Program, and inputs from researchers and public health professionals in the State of California.

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