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October 1, 2011

Chairman Jeffrey Sanchez  
Joint Committee on Public Health  
State House, Room 130  
Boston, MA 02133

Chairwoman Susan Fargo  
Joint Committee on Public Health  
State House, Room 504  
Boston, MA 02133

**Testimony of the Massachusetts Sierra Club in Support of H.2905  
An Act Relative to Reporting on Health Effects of Particulate Matter**

Dear Chairwoman Fargo, Chairman Sanchez, and Members of the Committee,

Thank you for providing this opportunity to offer our comments on H.2905, sponsored by Representative Provost, which calls for a comprehensive study of data on the health effects of particulate air pollution from surface transportation. The Sierra Club wishes to express our strong support in favor of this legislation.

The Sierra Club is the oldest and largest non-profit, non-partisan organization environmental organization in the country. With over a forty year history in this chapter, the Massachusetts Sierra Club represents about 22,000 members and supporters throughout the state and 1.4 million nationwide. We fight for clean air, clean water, the preservation of the Commonwealth's most precious natural spaces, and healthy, vibrant communities.

Particulate matter is a chemically diverse mixture of extremely small airborne particles and water droplets that are approximately 10 micrometers in diameter or smaller. People readily inhale these particles as they breathe. The particles then enter people's lungs and potentially bloodstream. Particulate matter in elevated concentrations has negative health impacts.

Particulate matter has been shown to:

- decrease lung function<sup>1</sup>
- cause chronic bronchitis<sup>2</sup>
- cause irregular heartbeats and heart attacks<sup>3</sup>
- increase symptoms of already existing respiratory illnesses<sup>4</sup>
- cause premature death in people with heart or lung disease<sup>5</sup>

Particulate matter from diesel combustion is also linked to cancer<sup>6</sup>. Children are particularly susceptible to negative impacts of particulate pollution because they inhale 50% more air per pound of body weight than adults and their lungs are still developing<sup>2</sup>.

Particulate matter originates from multiple sources including fossil fuel combustion (eg. vehicle exhaust, home heating systems), burning organic materials (eg. burning yard waste) and industrial processes. Some types of particulate pollution are directly released from these sources and while other types are formed indirectly because the byproducts of fossil fuel combustion react with other chemicals in the atmosphere. In the United States, particulate pollution standards are currently aimed at controlling regional (eg. county-wide) pollution levels. However, available science has found that zooming in to local and near source scales uncovers locations within regions suffer from much higher negative health impacts of particulate matter<sup>7</sup>.


Particle levels adjacent to highways and diesel rails are especially problematic. Transportation related sources of particulate matter significantly contribute (up to 50% in urban areas) to particulate pollution. This includes fossil fuel combustion from cars, buses and trains (especially those that run on diesel<sup>8</sup>.) Additionally, moving vehicles and road construction projects stir up dust on roads causing settled particles to reenter the atmosphere. Numerous studies in other regions of the country and world have shown that elevated particulate matter caused by nearby surface transportation corridors creates serious health risks<sup>9</sup>. However, the extent to which surface transportation in MA is threatening surrounding areas is poorly understood.

H.2905 will provide the funding to gather and analyze comprehensive data on the health impacts from particulate matter on populations that are located within 500 feet of any roadway with 50,000 or more motor vehicle trips per day or any rail line used regularly by diesel locomotives. The study shall include, but not be limited to, examining respiratory and cardiovascular disease and cancer incidence that may be affected by exposure to surface transportation-related particles.

A better understanding of the health effects of particulate air pollution from surface transportation will allow serious health problems in the state to be minimized by educating city planners and decision makers. This information could limit the building or expansion of facilities (such as schools, offices, parks or residential neighborhoods) in areas with high concentrations of dangerous particulate matter. This information will also be enormously helpful to citizens. Exercising increases particulate matter health risks because exercisers are breathing more rapidly and therefore inhaling more particulate matter than they would otherwise.

The Sierra Club fully supports this proposed legislation, H.2905, and hopes that this bill is reported favorably by the committee and is supported by all the members of the Senate and the House of Representatives. We strongly believe that this bill would have significant positive impact on the health of Massachusetts residents.

Respectfully,

A handwritten signature in black ink that reads "James McCaffrey". The signature is written in a cursive style and is underlined with a long horizontal line that extends to the right.

James McCaffrey  
Director  
Massachusetts Sierra Club

Encl: American Lung Association, Facts About Particle Pollution

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<sup>1</sup> Report On Particulate Matter, Health. US Environmental Protection Agency. Retrieved from [www.epa.gov/pm/health.html](http://www.epa.gov/pm/health.html) August 10, 2011.

<sup>2</sup> ibid

<sup>3</sup> ibid

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<sup>4</sup> ibid

<sup>5</sup> ibid

<sup>6</sup> Report On Particulate Matter, Mobile Source Emissions - Past, Present, and Future, US Environmental Protection Agency. Retrieved from [www.epa.gov/oms/inventory/overview/pollutants/pm.htm](http://www.epa.gov/oms/inventory/overview/pollutants/pm.htm) August 30, 2011

<sup>7</sup> Particulate Matter from Regional Transportation is an Undisputed Local Health Problem, Wig Zamore, Testimony before the MA Joint Committee on Public Health, July 25, 2007

<sup>8</sup> Report on Diesel Exhaust in New England, US Environmental Protection Agency. Retrieved from <http://www.epa.gov/region1/eco/diesel/index.html> on Aug 30, 2011

<sup>9</sup> Research & Development, Highway Study Sizes Up Pollution, US Environmental Protection Agency. Retrieved from [www.epa.gov/ord/sciencenews/scinews\\_highway-study.html](http://www.epa.gov/ord/sciencenews/scinews_highway-study.html) on Aug 30, 2011