



March 1, 2021

Chair Marsh, Vice-Chair Noble, Vice-Chairs Helm and Brock Smith, and Members of the Committee,

My name is Akashdeep Singh and I am the Policy and Advocacy Manager at OPAL Environmental Justice Oregon. It is my honor and pleasure to write in support of HB 2479, a bill that adds black carbon into the definition of global warming and directs the Department of Environmental Quality to estimate black carbon emissions in Oregon and recommend mitigation strategies.

A 2016 analysis from the Earth Institute at Columbia University notes that black carbon is dangerous to public health (including cardiovascular and pulmonary systems), agriculture, and ecosystems.<sup>1</sup> Black carbon can absorb “one million times more energy” than carbon dioxide (CO<sub>2</sub>) and it also “the second largest contributor to climate change after CO<sub>2</sub>.”<sup>2</sup> Because black carbon particles can absorb so much heat, when they travel to the atmosphere, they warm it.<sup>3</sup> And when black carbon particles, which have a significantly smaller shelf life than CO<sub>2</sub>, fall back with precipitation, they “darkens the surface of snow and ice,” which warms the snow and increases the rate of melting.<sup>4</sup>

In 2019, Multnomah County was reported to be “among the worst counties in the nation for exposure to airborne diesel exhaust.”<sup>5</sup> These statistics from the Environmental Protection Agency (EPA) are not necessarily news to Oregon communities who have been and are breathing a disproportionate amount of diesel pollution.<sup>6</sup> Communities living near highways,

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<sup>1</sup> Renee Cho, “The Damaging Effects of Black Carbon,” *State of the Planet*, Earth Institute at Columbia University (Mar 22, 2016), found at <https://blogs.ei.columbia.edu/2016/03/22/the-damaging-effects-of-black-carbon/>.

<sup>2</sup> Renee Cho, “Damaging Effects.”

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> Brian Wood, “Despite its 'green' reputation, Oregon lags when it comes to cleaning up diesel pollution,” KATU (Feb 7, 2019), found at <https://katu.com/news/local/despite-its-green-reputation-oregon-lags-when-it-comes-to-cleaning-up-diesel-pollution>.

<sup>6</sup> Brian Wood, “Despite its 'green' reputation.”

roads with high industrial diesel truck traffic, and in rural areas with diesel engine-powered agricultural equipment feel the effects on a daily basis.

Communities of color, low-income communities, and rural communities suffering from a disproportionate share of black carbon pollution is a direct result of policies that have deemed our lives expendable, or at the very least, not worth as much. The catastrophic effects of black carbon on human health are well-documented and have been for quite some time.

Fine particles (more commonly referred to as PM 2.5 in regulatory terminology) pose significant risk to pulmonary, cardiovascular, and even neurological health. The California Office of Environmental Health Hazard Assessment posits diesel exhaust as having “the highest cancer risk of any toxic air contaminant” they evaluated.”<sup>7</sup>

Exposure to diesel exhaust has been associated with nasal and eye irritation, headaches, coughs, nausea, airway inflammation, and the development and augmenting of respiratory diseases such as asthma.<sup>8</sup> It has been linked to “lung cancer, asthma, Chronic Obstructive Pulmonary Disease (COPD), stroke, and ischemic heart disease.”<sup>9</sup>

Diesel exhaust exposure can impair lung development in children.<sup>10</sup> Alveolar development is crucial as oxygen and carbon dioxide exchange occurs in these chambers of the lungs. Between birth and a child reaching the age of four, alveoli development usually increases by a factor of ten and diesel exhaust exposure in this period can be particularly damaging.”<sup>11</sup>

Oregon has a reputation for environmental leadership. HB 2479 is an opportunity for Oregon to not just live up to that reputation, but to also take a strong leadership role in mitigating the harm caused by black carbon.

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<sup>7</sup> “Health Effects of Diesel Exhaust,” CalEPA Office of Environmental Health Hazard Assessment and The American Lung Association of California (May 21, 2001), found at <https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf>, 2.

<sup>8</sup> “Health Effects of Diesel Exhaust Emissions” at 2.

<sup>9</sup> “Health Impacts and Costs of Diesel Emissions in the EU,” CE Delft (Nov 2018), found at <https://epha.org/wp-content/uploads/2018/11/embargoed-until-27-november-00-01-am-cet-time-ce-delft-4r30-health-impacts-costs-diesel-emissions-eu-def.pdf>, 15.

<sup>10</sup> “Health Effects of Diesel Exhaust Emissions” at 2.

<sup>11</sup> Nicholas Kenyon and Fu-Tong Liu, “Pulmonary Effects of Diesel Exhaust: Neutrophilic Inflammation, Oxidative Injury, and Asthma,” *The American Journal of Pathology* (Vol. 179, No. 6, Dec 2011), found at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3263604/pdf/main.pdf?tool=EBI>, 2678

We urge you to vote yes on this critical piece of legislation.

Sincerely,

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