

March 20, 2019

To: House Energy and Environment Committee

RE: HB2007

FR: Linda George PhD, Professor, Portland State University (georgeL@pdx.edu)

I would like to add my voice to those who urge you take action on reducing diesel emissions in Oregon. I have been conducting atmospheric chemistry research for nearly 30 years at Portland State University. For the last 15 years, I have been focused on air quality issues specifically in Portland. Around 2007, Oregon Department of Environmental Quality published a model that indicated that the air pollutant driving cancer risk in Portland was diesel particulate matter. Like many Oregonians, I was surprised by this result. As a specialist in air pollution measurements, I was keen on verifying the model with ambient measurements.

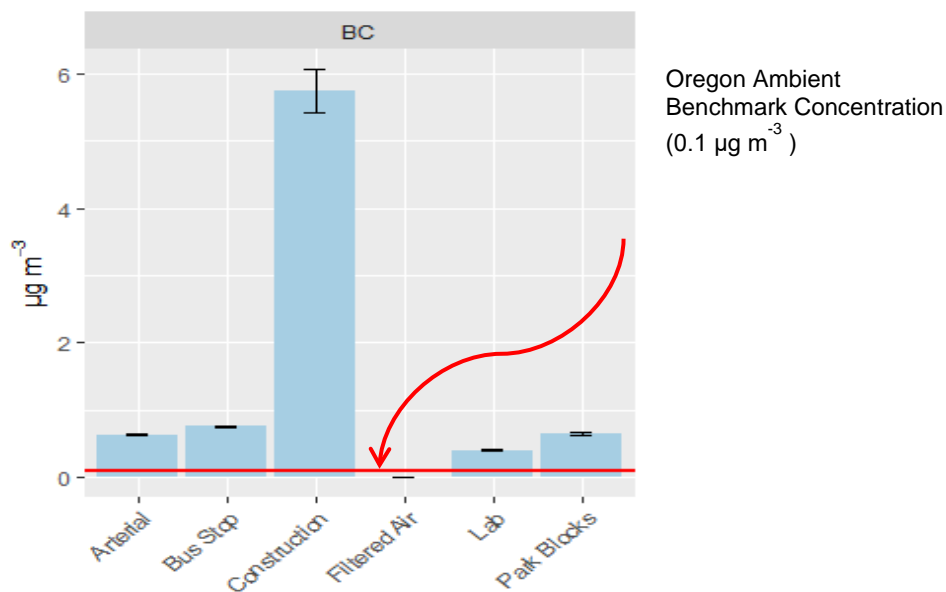
The instrumentation for making these measurements is expensive but recently I was able to purchase this instrument to make measurements of black carbon particulate matter in air (an established surrogate for diesel particulate matter). We have made many measurements around the city, downtown, NW Portland and near freeways. **Our unequivocal result is that our measurements generally agree with Oregon DEQ modeling and confirms that diesel particulate matter is very elevated in Portland compared to health benchmarks.**

Below is a study that we conducted in downtown Portland next in various microenvironments. Note that black carbon levels are very high (nearly 60 times the health benchmark) downwind of a construction site. We have seen this phenomenon regularly near construction sites at the early stages of construction (earth moving activities).

#### Variation of black carbon particulate matter in urban microenvironments

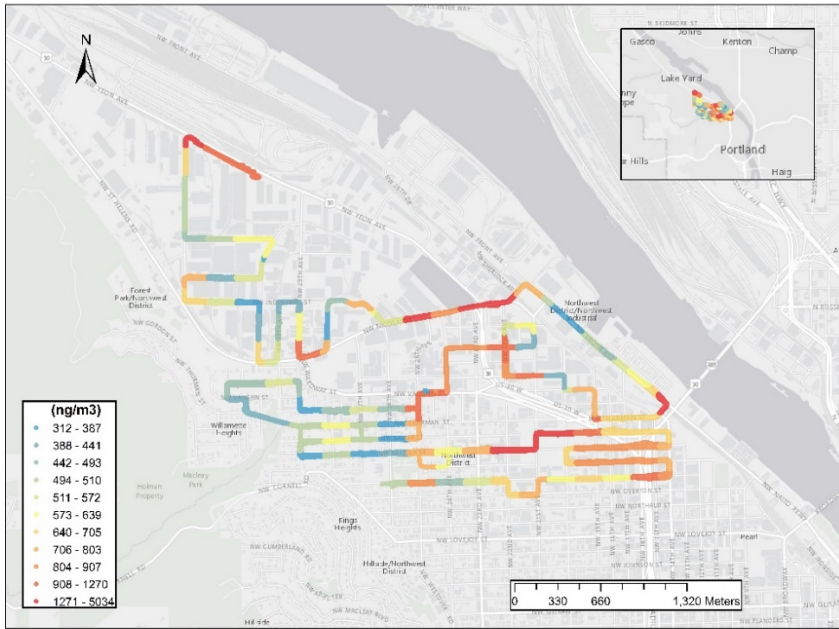
P. Orlando, B. Bennett, L.A. George ([georgeL@pdx.edu](mailto:georgeL@pdx.edu))

Dept. of Environmental Science and Management, Portland OR

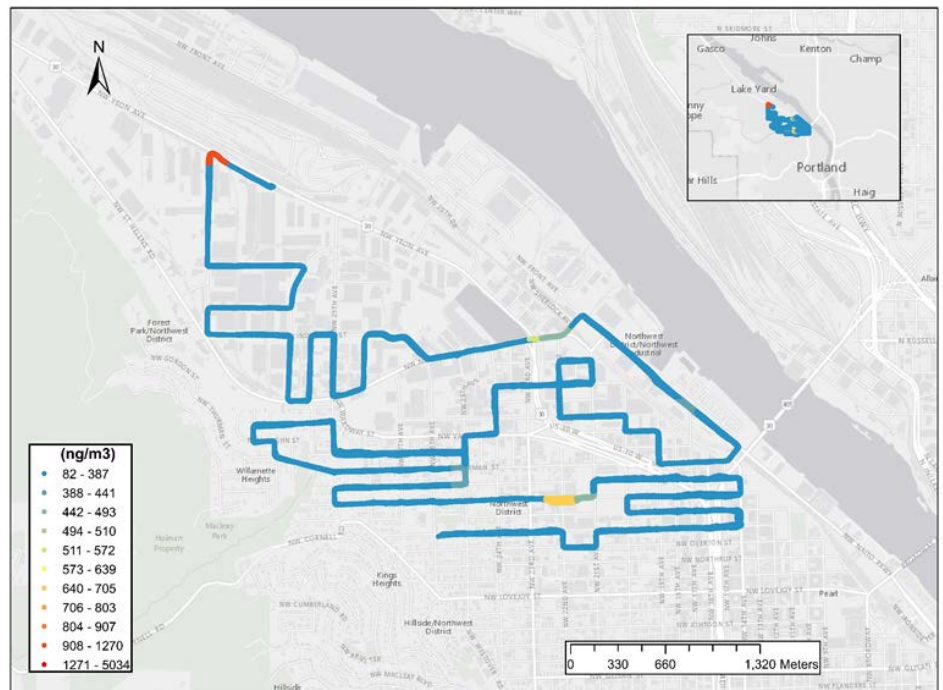


We have also made measurements in NW Portland with a mobile monitoring system with funding from METRO. The results below contrast the levels in NW Portland midday during a weekday and weekend. There is a high level of automobile traffic during both times but much lower black carbon on the weekend (in ng/m<sup>3</sup>). This is most likely due to the much lower commercial trucking activity during the weekend.

13:30 Weekday Black Carbon Variation in Northwest Portland, Oregon



13:30 Weekend Black Carbon Variation in Northwest Portland, Oregon



We have been working to PPS to study air quality at Harriet Tubman Middle School and have found similarly high levels of black carbon particulate matter that is highly correlated to traffic levels along I-5N situated adjacent to the school. I-5 is a major freight trucking corridor along the west coast.

**The bottom line is that both models and measurements agree that diesel particulate matter is highly elevated in Portland and poses a significant health risk.** This point was recognized by the US Environmental Protection Agency in awarding a \$467K grant to DEQ and Portland State University in 2018 to continue to study diesel emission sources and educate vulnerable communities about their exposures to diesel emissions.

There is no scientific basis for not taking action. I urge you to approve HB 2007 and begin the cleanup of diesel emissions in Oregon. Please feel free to contact me with any questions.