



COMMERCIAL DIESEL TRUCKS

Who Is Causing Portland's Diesel Particulate Problem?

Version 3 2/1/24

In December 2023, Cascadia Action obtained records of all diesel vehicles in Oregon from Oregon Department of Transportation (ODOT) and Oregon Driver & Motor Vehicle Services (DMV). We ranked all unfiltered diesel truck fleets in Oregon posing the greatest risk to neighborhoods, the only publicly available source of this data.

Multnomah ranks among the worst 1% of counties nationwide for diesel particulate exposure according to 2019 EPA AirToxScreen released December 2022.

The State of California reports that diesel particulate is "responsible for about 70% of California's estimated known cancer risk attributable to toxic air contaminants." DEQ reported in 2015 that diesel exhaust causes lung and bladder cancer, certain heart attacks and other blood clotting diseases, coronary artery disease, malignant childhood brain tumors, decreased cognitive functioning, increased incidence of Lou Gehrig's disease, acute bronchitis, and asthma. A study by Bishop et al. found diesel particulate causes dementia and Alzheimer's disease.

By 2023, virtually every diesel vehicle in California had a filter, removing 90% of particulate before it went airborne. Most industrial diesel trucks in Portland are unfiltered. The 2019 Oregon Diesel Bill HB2007 allows Oregon diesel vehicles to drive unfiltered until 2029 and beyond.



Who causes the Portland area's diesel particulate problem?

EPA 2019 EPA AirToxScreen calculated that 52% of diesel particulate in Multnomah County is caused by industrial trucks. Most of these diesel trucks are unfiltered short-haul trucks pacing back and forth, making deliveries in Portland. See graph at right.

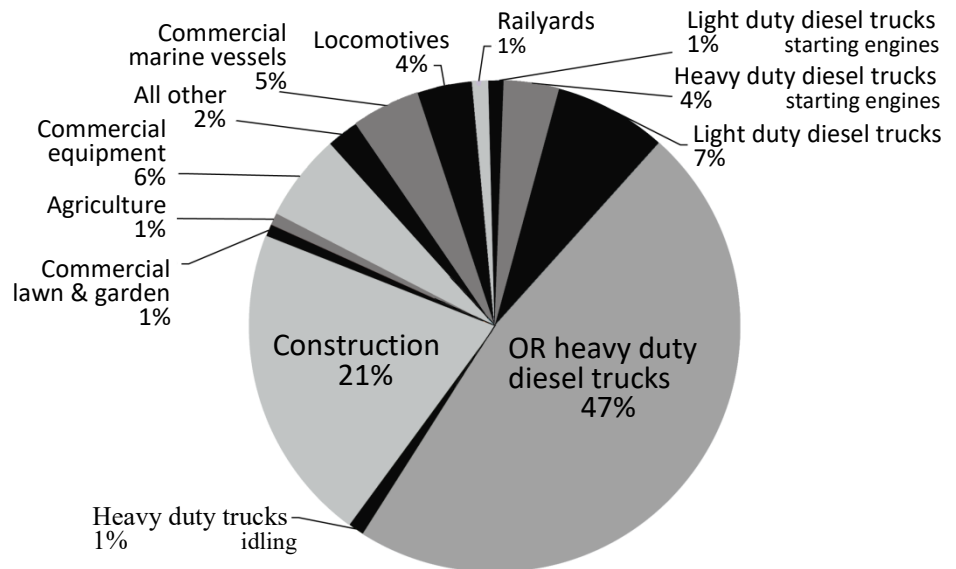
Newly-obtained on-road diesel vehicle records

Cascadia Action information requests resulted in ODOT and DMV sending us 522,262 records which includes all on-road diesel vehicles registered in Oregon. These records do not include off-road diesel vehicles such as excavators, bulldozers, backhoes, road graders, and portable generators. No Oregon agency collects records for off-road vehicles. These spreadsheets are an update for diesel vehicle information requests we received from ODOT and DMV in 2017 and 2018. ODOT provided us records for all commercial diesel on-road vehicles weighing over 26,000 pounds and registered in Oregon. The DMV diesel records include commercial trucks weighing under 26,000 pounds, as well as all government and personal diesel vehicles. For personal vehicles, owner names and street addresses where redacted.

Our analysis considers vehicles from model year 2007 and earlier to be unfiltered. Retrofits allow diesel filters to be installed on older engines, but are rare. Grants, tax credits, and incentives have mitigated only a small number of Oregon vehicles. DEQ provided us a spreadsheet of their retrofit program results. DEQ and Metro retrofitted, repowered, or replaced 755 diesel vehicles in Oregon between 2002 and 2015 at a cost of \$28.5 million.

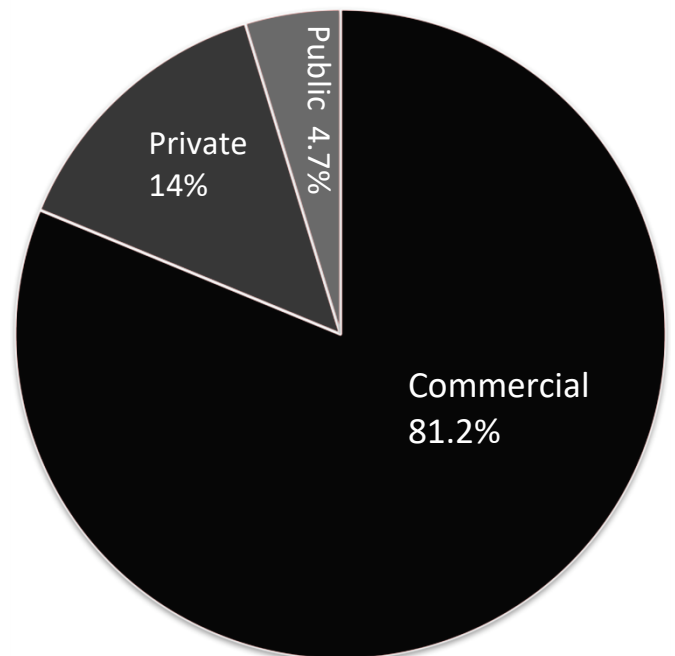
Diesel particulate sources for Multnomah County

2019 EPA AirToxScreen released December 2022



The graph above by Portland Clean Air made using EPA data available here: www.epa.gov/AirToxScreen/2019-airtoxscreen-assessment-results#state From the dropdown menu, download the Oregon file. Multnomah ambient concentrations for diesel particulate were copied from Access and graphed in Excel. Sources less than 1% were omitted.

Portland three-county on-road diesel vehicle emissions by ownership



The graph above by Portland Clean Air using 2017 and 2018 ODOT and DMV on-road diesel vehicle data online at: portlandcleanair.org/files/pcadata.html

Largest unfiltered diesel truck fleets licensed in Oregon

2024 DMV and ODOT data Statistical analysis by Doug Loqa djloqation@gmail.com

Truck fleet owner	Unfiltered trucks	Truck fleet owner	Unfiltered trucks
1. XPO Logistics	7,469	11. TriMet	945
2. Penske	4,335	12. United Rentals	576
3. Fedex	3,816	13. Mid Columbia Bus	548
4. UPS	2,542	14. Rollins Leasing	543
5. First Student	2,209	15. Waste Management	505
6. Greyhound	1,602	16. Cardmoore Trucking	500
7. Albertsons/ Safeway	1,371	17. PGE	444
8. USF Reddaway	1,315	18. City of Portland	406
9. Yellow Transportation	1,272	19. Oregon Dept of Forestry	372
10. ODOT	1,161	20. Sherman Brother Trucking	358

For a complete ranking of Portland-area unfiltered truck fleets go to: portlandcleanair.org/dieseltrucks

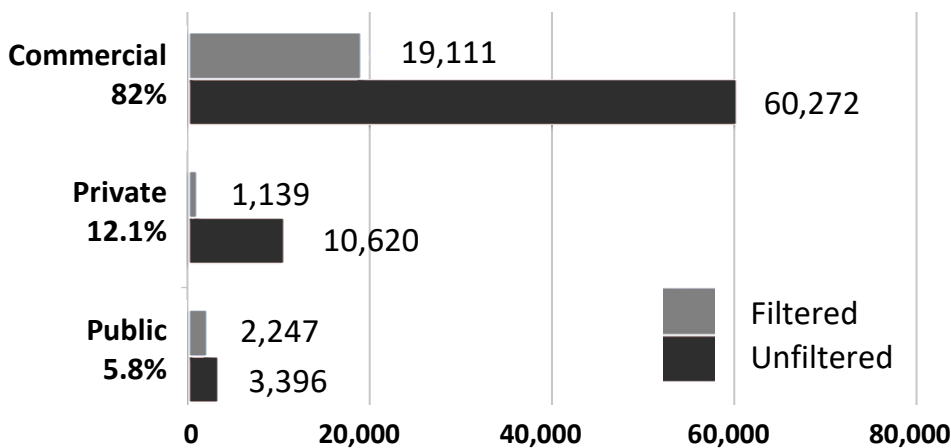
* Trimet exclusively uses renewable diesel which reduces half of emissions.

Commercial fleets contribute over 82% of Portland area on-road diesel particulate

The graph below is based on the fact that filtered diesel vehicles emit only 1/10 of diesel particulate compared to unfiltered diesels. Portland-area

commercial fleets are 24.1% filtered and 75.9% unfiltered; privately-owned diesel vehicles are 9.7% filtered and 90.3% unfiltered; publicly-owned diesel vehicles are 39.8% filtered and 60.2% unfiltered according to 2017/18 ODOT and DMV data.

Portland diesel particulate: mostly industry trucks



The graph above by Portland Clean Air using 2017 and 2018 ODOT and DMV on-road diesel vehicle data online at: portlandcleanair.org/files/pcadata.html



Works Cited:

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