



COMMERCIAL DIESEL TRUCKS

Who Is Causing Portland's Diesel Particulate Problem?

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Summary

Portland, Oregon is ranked by the Environmental Protection Agency (EPA) as one of the worst cities in America for exposure to diesel particulate, the most dangerous airborne carcinogen. Diesel particulate causes more than five times more cancer in Portland than all other airborne carcinogens combined.

California solved this problem by requiring diesel particulate filters on virtually all diesel vehicles. These filters remove 90% of diesel particulate before it can go airborne. In the Portland area, most diesel trucks do not have filters. Commercial trucks cause 81.2% of airborne diesel particulate in Portland according to the EPA National Emissions Inventory. Ten commercial Portland area trucking companies cause more than a fifth of all Portland area diesel truck particulate pollution.

Portland Clean Air obtained records of all trucks in Oregon from ODOT and DMV in 2018. Our statistical analysis of this data is the first time these records have been publicly available. This report summarizes our findings and discloses which companies are most responsible for Portland's ongoing air pollution public health crisis.



In its most recent National Air Toxics Assessment, the Environmental Protection Agency (EPA) named numerous precincts of Portland, Oregon among the worst 2% of precincts nationwide for airborne diesel particulate concentrations. These include precincts in downtown, Upper Waterfront, Pearl District, and parts of Cully. A precinct in Goose Hollow ranked among the worst 1% in the nation. The same report listed Portland as the worst city in America for respiratory distress from air pollution. Clean Air Task Force in Boston analyzed EPA data and State of California risk assessments and found diesel emissions in Portland cause more than five times as many cancers in Portland as all other inhaled carcinogens combined.

Who causes the Portland area's diesel particulate problem?

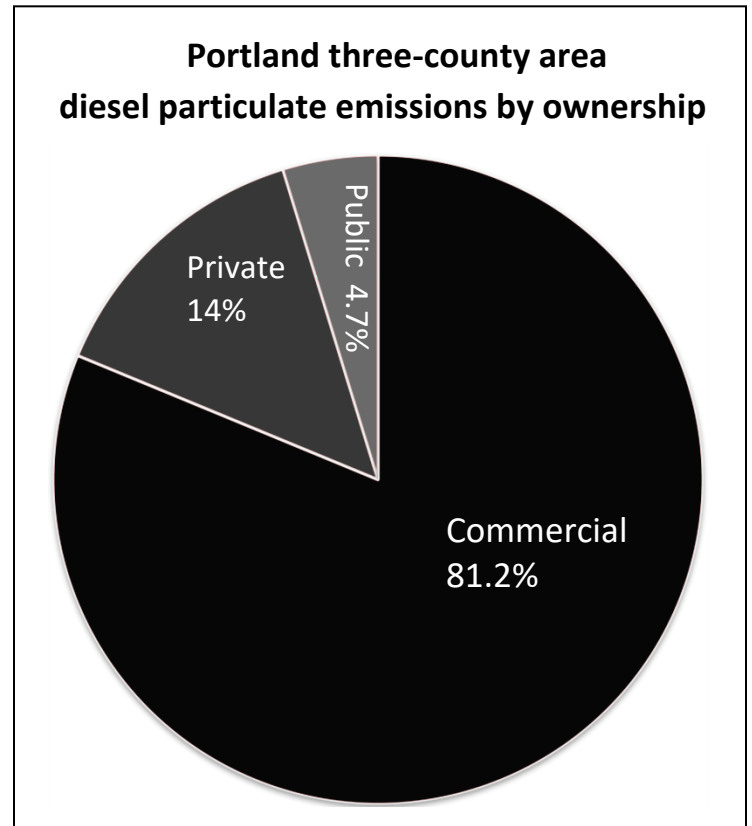
In early 2018 Portland Clean Air received ODOT and DMV data for all diesel trucks in Oregon. We determined that the ten largest commercial fleets operating unfiltered diesel trucks in the Portland area cause 21.6% of all airborne diesel particulate from all commercially, publicly, and privately owned diesel trucks combined. A study by the EPA National Emissions Inventory found diesel trucks cause 82.5% of Portland area diesel particulate pollution, mostly from in-city short haul trucks.

The largest unfiltered commercial fleet, XPO Logistics operate 8,604 unfiltered trucks and cause 11.2% of Portland diesel particulate emissions by itself. USF Reddaway, with 3,307 diesel trucks, the second largest Portland unfiltered commercial fleet, causes 2.9% of Portland diesel emissions from its 1,199 filtered and 2,108 unfiltered trucks.

Diesel particulate is deadly

Diesel particulate acts like the liquid mist in an inhaler by adhering to and efficiently delivering harmful chemicals from the air into the lungs. Diesel particles easily enter the bloodstream, damage lungs, worsen asthma, and cause early deaths. In the Portland metro area, airborne diesel particulate is primarily due to the unfiltered exhaust from nearby highways.

Beginning with model year 2008 vehicles, federal law required filters that remove 90% of diesel particulate from truck exhaust. California required filters on virtually all trucks by 2015. The Oregon Environmental Quality Commission recognizes diesel particulate as a carcinogen, but as yet fails to regulate the trucking industry.



Newly-obtained diesel truck records

Portland Clean Air information requests in 2017 and early 2018 resulted in Oregon Department of Transportation (ODOT) and Oregon Driver and Motor Vehicle Services (DMV), a division of ODOT, sending us diesel truck registration records in three spreadsheets, arriving by email in February 2018. ODOT provided records for commercial diesel trucks for highway use, weighing over 26,000 pounds, and registered to owners with a mailing address, location address, or both, in Oregon. The ODOT records are for highway vehicles only and do not include off-highway vehicles such as agricultural and construction equipment. The DMV diesel records include commercial trucks weighing under 26,000 pounds, as well as government and personal vehicles. For personal vehicles, owner names and street addresses had been redacted.

These records include both highway and off-highway vehicles. Together the ODOT and DMV files comprise 333,621 diesel vehicle registration records.

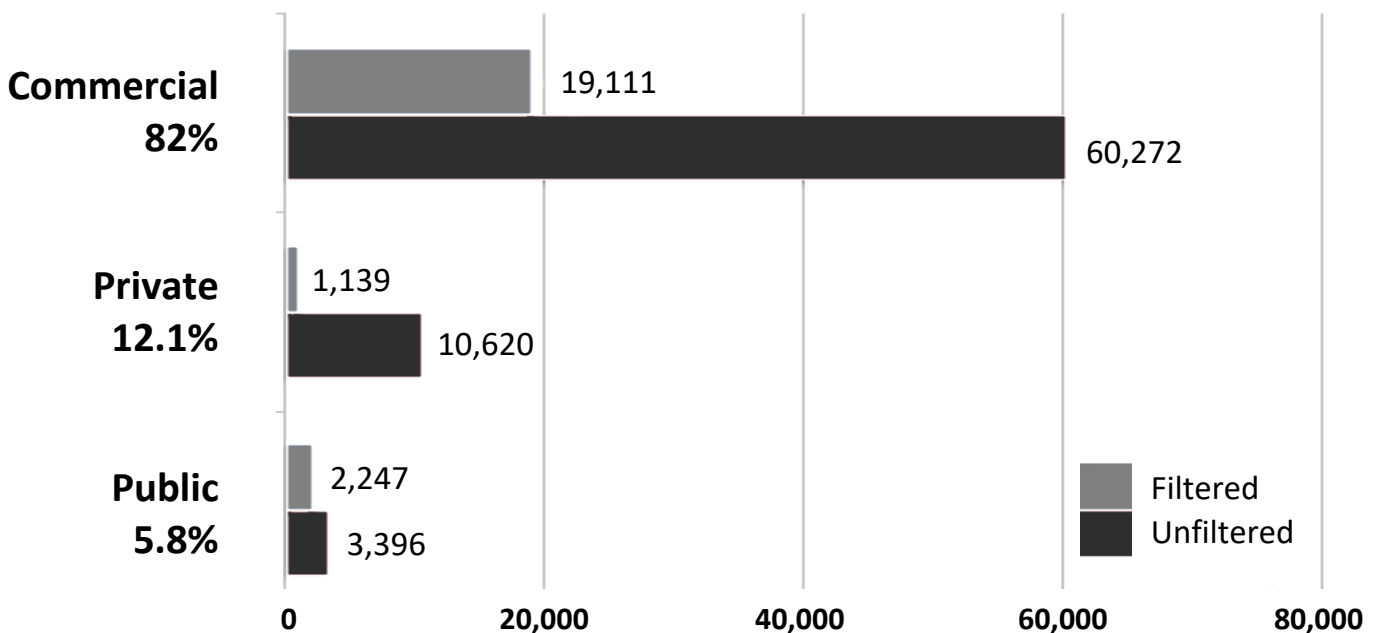
After records were screened for duplicate license plate numbers, missing ZIP codes, and possible truck type misidentification, we identified all unique diesel truck registrations in Clackamas, Multnomah, and Washington Counties based on zip codes and ODOT County designations. These registrations were then consolidated by removing extra spaces and characters, misspellings, and clear misnaming into a final set of 11,948 commercial fleets comprised of 79,383 trucks, 11,759 personal owners with a total of 11,759 trucks, and 219 government owned public fleets with 5,643 trucks. There are likely a few records that could be further combined because of unnoticed spelling variation or unidentified shared ownership. However, these are unlikely to significantly change the size and ranking of any medium or large fleet. This analysis assumed vehicles from model year 2009 on are filtered and emit only 1/10 of diesel particulate compared to unfiltered diesels. Retrofits, which allow diesel filters on older engines, are rare, so pre-2009 vehicles were assumed to be unfiltered.

Grants, tax credits, and incentives have mitigated a relatively 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 costing \$28.5 M. The 2017 Volkswagen emissions settlement set aside \$72.9 M for this purpose.

Commercial fleets contribute over 82% of the Portland area's diesel particulate from trucks

Of the 96,785 diesel trucks in the three-county Portland area, 79,383 (82%) are commercially owned. Privately owned trucks number 11,759 (12.1%) and publicly owned diesel trucks account for 5,643 (5.8%). Diesel trucks in commercial fleets are 24.1% filtered and 75.9% unfiltered; privately owned diesel trucks are 9.7% filtered and 90.3% unfiltered. Publicly owned diesel trucks are 39.8% filtered and 60.2% unfiltered. Of the well over 10,000 commercial fleets, the 58 worst polluting fleets each run close to or more than 100 unfiltered diesel trucks and cause almost a third of all Portland area diesel truck emissions. The worst ten commercial fleets alone are responsible for over 21.6% of all Portland area diesel truck emissions.

Portland three-county area diesel truck ownership



Worst 10 Portland area fleets cause over 21.6% of Portland diesel particulate, in ranked order

Truck fleet owner	Total trucks			Truck fleet owner address		
	Unfiltered trucks	Filtered trucks	Total trucks			
1. XPO Logistics	8604	0	8604	1717 NW 21st Ave	Portland	97209
2. USF Reddaway	3307	1199	2108	7720 SW Mohawk St Bldg H	Tualatin	97062
3. Penske Truck Leasing	1498	174	1324	1 NE Columbia Blvd	Portland	97211
4. TriMet	1730	725	1005	1800 SW 1st Ave Ste 300	Portland	97201
5. Safeway	1214	243	971	16800 SE Evelyn St	Clackamas	97015
6. United Parcel Service	693	16	677	6707 N Basin Ave	Portland	97217
7. Portland General Electric	911	278	633	121 SW Salmon Street	Portland	97204
8. Wilson Construction	727	226	501	1190 NW 3rd Ave	Canby	97013
9. Ryder Truck Rental	839	369	470	310 N Columbia Blvd	Portland	97217
10. Waste Management	616	141	475	7227 NE 55th Ave	Portland	97218

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

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