



*Washington Dept. of Ecology's Clean Diesel
Grant Program*

*Port of Vancouver Tenant Workshop
08/26/09*

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For diesel info on the internet go to:

http://www.ecy.wa.gov/programs/air/cars/diesel_exhaust_information.htm

*Please ask questions or
comment at any time!!*

Health Impacts of Diesel Fine Particles

- Diesel fine particles are the most toxic air pollutant in WA– making up 70% of the cancer risk from airborne pollutants.
- Diesel fine particles affect health at levels well below what federal air quality standards allow for fine particles (starting as low as 9 ug/m³).
- Diesel fine particles are carried deep into the lungs and can cause or make worse:
 - Asthma, Lung disease, Impaired lung development in children, Heart disease and Cancer
- Health effects are more prevalent among sensitive populations: children, elderly, people with existing heart and lung disease and asthma, as well as low-income and minority communities.
- In WA, more than 4.2 million people live near major urban transportation corridors and are exposed to diesel fine particles every day. Within these areas are:
 - 4,000 daycares, 1,500 schools, 100 hospitals and 200 nursing homes

Benefits of Reducing Diesel Fine Particles

- **The cost of reducing diesel fine particles is significant, but the benefits are much larger:**
 - **California Air Resource Board: for every \$1 invested, \$3 to \$8 returned in:**
 - reduced health costs;
 - improved health and;
 - lower diesel fleet operation/maintenance costs
 - **Union of Concerned Scientists: for every \$1 invested, \$9 to \$16 returned to society in benefits**
 - **Federal Clean Air Act Advisory Committee: cleaning up the existing fleet would cost just 5% of the 10- year cost to operate/maintain the fleet**

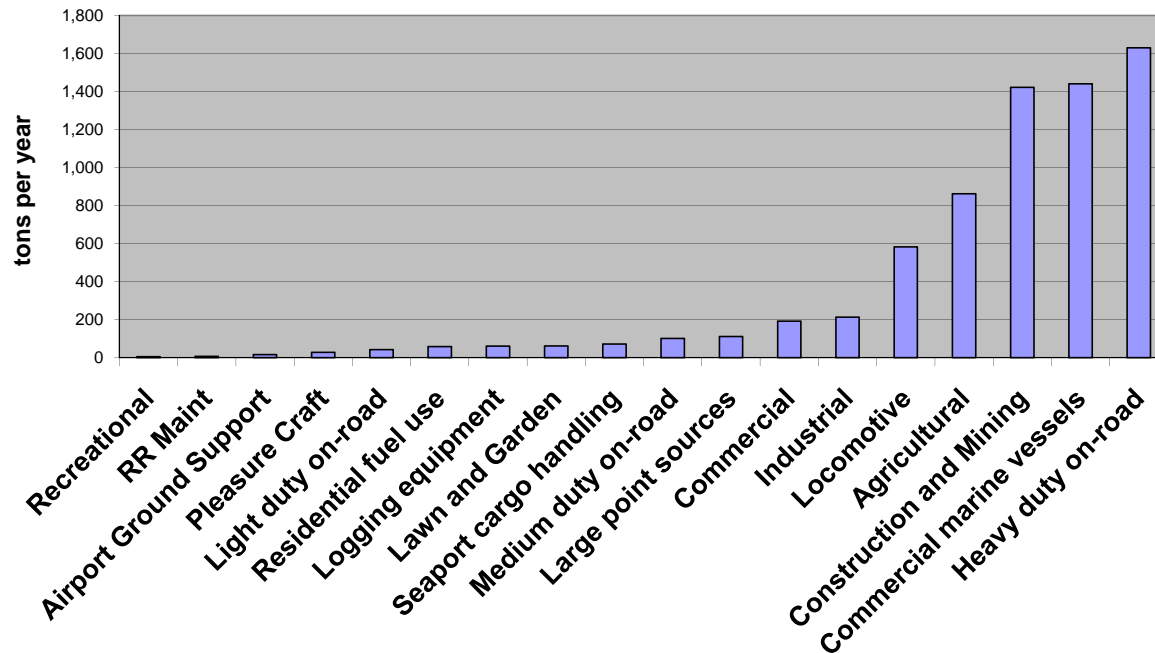
The Legacy Diesel Engine Problem

WA State Dept. of Ecology's Diesel Strategy focuses on fine particles emitted by the fleet of pre-2007 on-road and pre-2010 off-road diesel engines (known as "legacy" engines). New and proposed federal exhaust standards will address newly built and future engines.

- Legacy diesel engines have long lives and slow turnover. They will be around for many years.
- Legacy diesel engines will contribute significant amounts of diesel fine particles for many years - damaging the health of generations of Washingtonians.
- Cleaning up the legacy fleet is essential to reduce adverse health effects from diesel fine particles.

Where Do Diesel Fine Particles Come From?

Sources of diesel fine particles in WA
2005 Statewide Emission Inventory

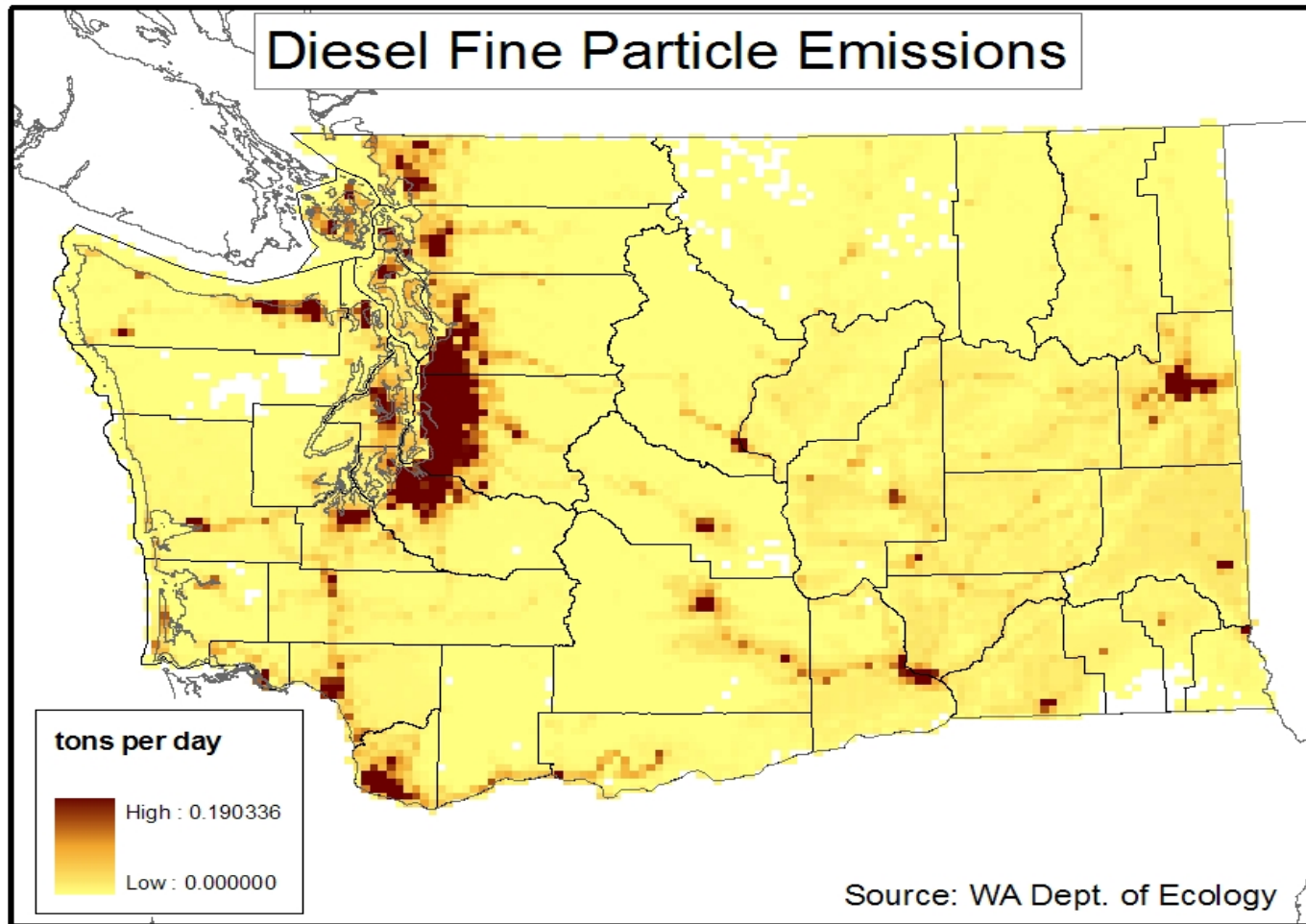


57% of all diesel fine particles in WA come from these major transportation sources:

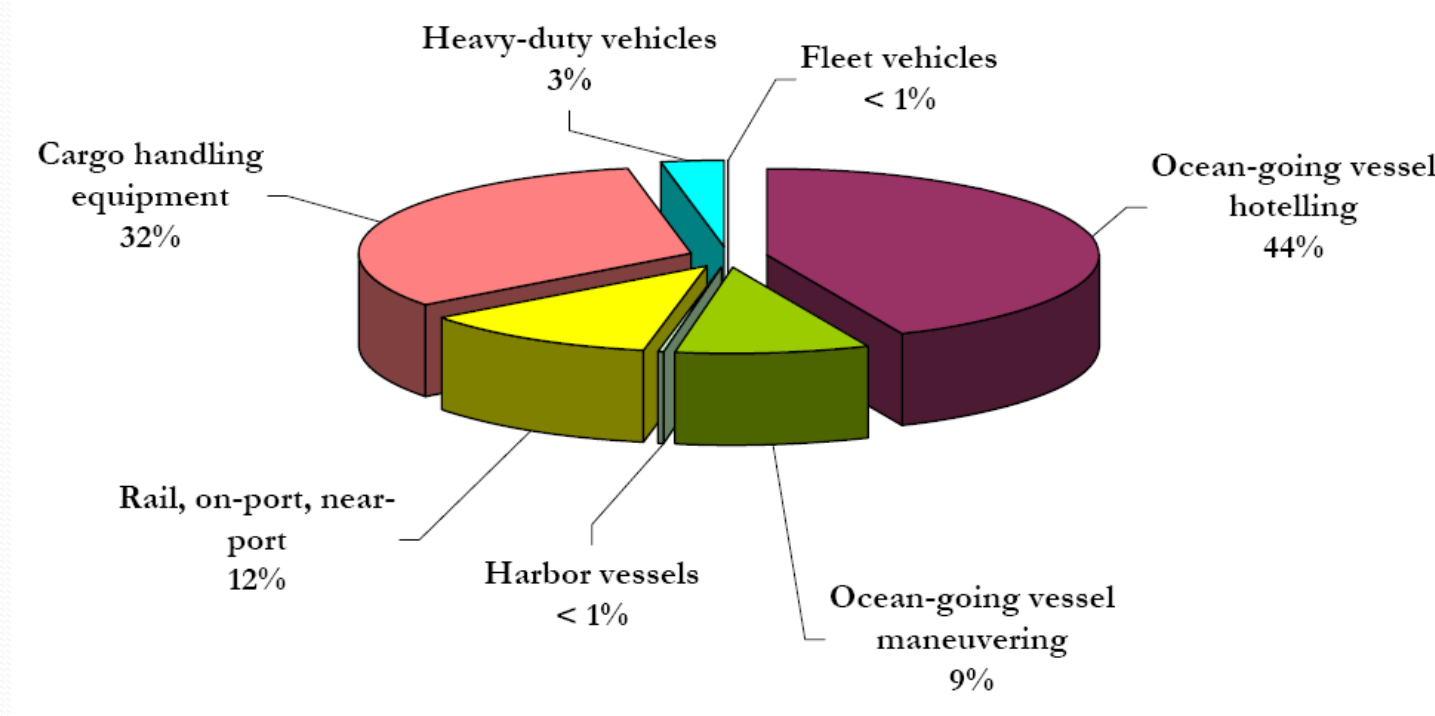
- *Trucking*
- *Marine vessels*
- *Rail*

Construction and agriculture contribute another 33%

Where are diesel fine particles concentrated?



- Taking a closer look -
Sources of Diesel Fine Particles at Port of Seattle

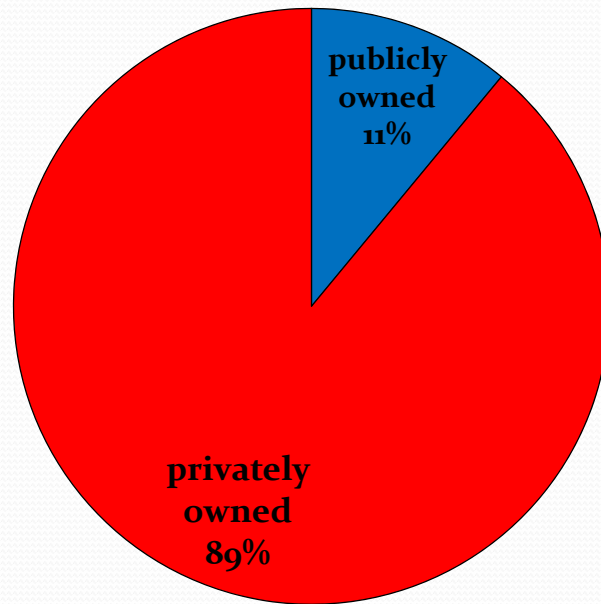


Source: 2005 Puget Sound Maritime Air Emissions Inventory. For more info contact Sarah Flagg, flagg.s@portseattle.org

Who owns diesel vehicles in WA?

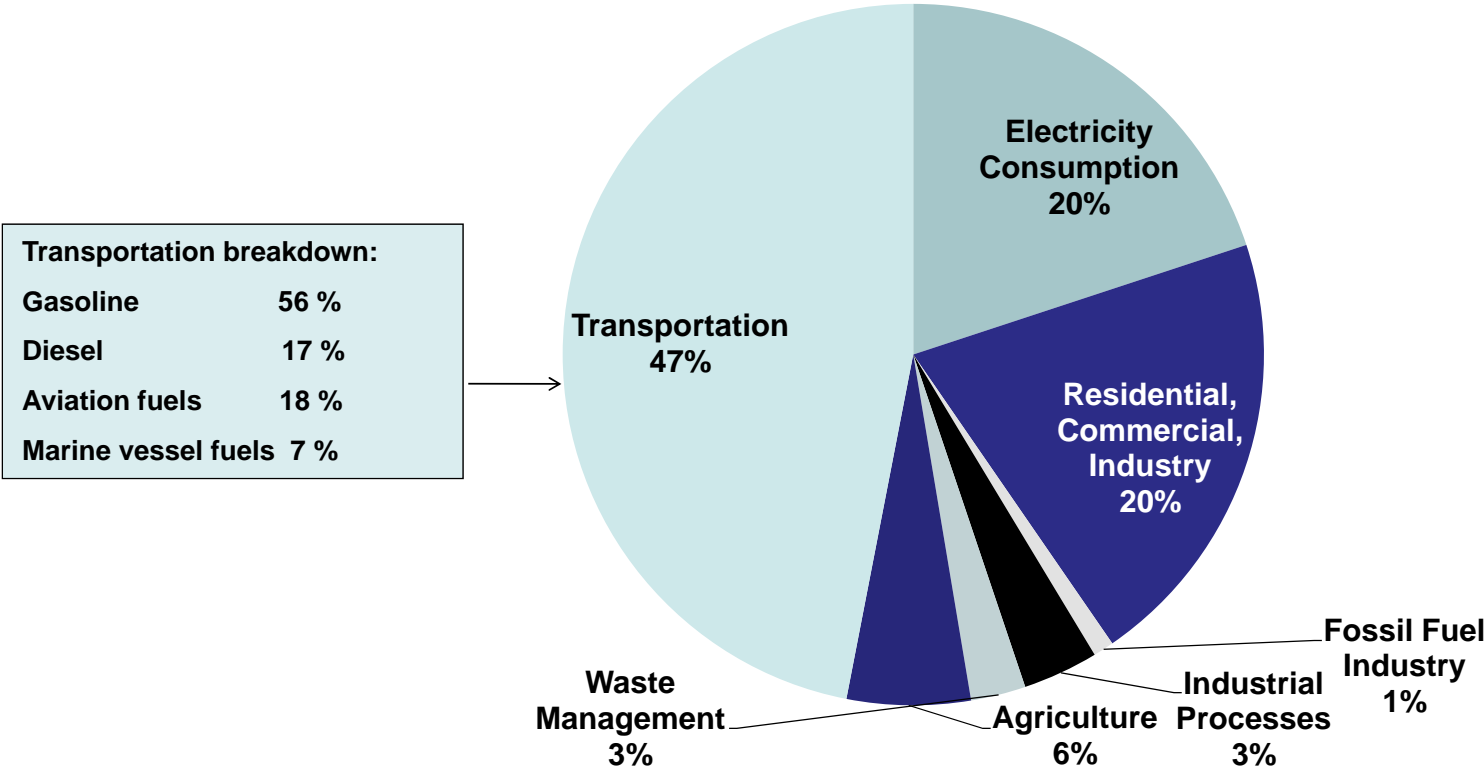
Most of the *publicly*-owned legacy engines have been cleaned up with public funds. However, most of the diesel engines in WA are *privately* owned...

Engines suitable for emission reduction technologies



Actions that reduce diesel fuel use also reduce greenhouse gases

Sources of Greenhouse Gas in WA - 2005
94.8 Million Metric Tons CO₂e



Source: Reference Case GHG Emissions for Washington State, ECY 2007.

For more info on GHG EI contact Gail Sandlin, gasa461@ecy.wa.gov

WA Clean Diesel Grant Program (WA-CDGP)

- **In 2003 the WA legislature appropriated \$25M to clean up diesel school buses and other public diesel fleets. Five year program.**
- **In 2008 a statute change allowed for addressing privately owned fleets. Priority given to port and refuse fleets, followed by trucking fleets operating mainly in WA.**
- **WA State funding for WA-CDGP is also supplemented by federal funds through DERA and ARRA.**

*Exhaust Technologies provided through WA-CDGP
100% of cost for parts and installation*

Type	Fine Particle Reduction	Maintenance
Diesel Oxidation Catalysts (DOC)	20-40%	None
Partial Flow Filter (PFF)	50-70%	None
Diesel Particulate Filter (DPF). School and transit buses only.	90-95%	50,000 Miles
Closed Crankcase Ventilation (CCV) Filter	6-8%	Replacement Filter @ 500 hrs or oil change

New this year – idle reduction technologies for public fleets and engine upgrades (rebuild/repower)



Port equipment that we are retrofitting

- Yard Trucks
- Top Picks
- Fork Trucks
- Side Picks
- Reach Stackers
- Straddle carriers
- RTG's
- Drayage trucks



Current Port Projects

Vehicle/Equipment Owner	Port	Number of Vehicles/Equipment	Cost
Totem Ocean Trailer Express	Tacoma	25	\$121,000
Ports America	Tacoma	7	\$20,000
Pacific Rail Services	Tacoma	5	\$28,000
Washington United Terminals	Tacoma	39	\$189,000
Eagle Marine	Seattle	47	\$251,000
Stevedoring Services of America	Seattle	73	\$186,000
Northland Services	Seattle	17	\$90,000
Port of Tacoma	Tacoma	71	\$291,000
APM	Tacoma	32	\$152,000
Husky	Tacoma	40	\$208,000
Ports America	Vancouver	52	\$250,000
Port of Vancouver	Vancouver	28	\$91,000
Kinder Morgan	Vancouver	7	\$39,000
Cascade Sierra Solutions	Tacoma/Seattle	64	\$350,000
Total		507	\$2,266,000

Note: \$1.2 M of the total is being covered by Federal Stimulus funds

What's next?

- **All available WA-CDGP funds are committed to current projects.**
 - **Once projects are complete, any left over funds will be applied to new projects. New projects are prioritized based on health benefits compared to cost of the project.**
- **We anticipate another allocation of DERA funding this fall.**
 - **Potentially a direct, non-competitive allocation of ~\$500,000**
 - **Plus a larger pot of competitive funds**
- **In anticipation of left over WA-CDGP funds and DERA allocation, equipment owners should apply for a WA-CDGP grant.**

How to apply for a WA-CDGP grant

- **Go to the diesel grant page of Ecology's diesel website:**
<http://www.ecy.wa.gov/programs/air/cars/DieselGrantPage.htm>
- **Grant application contains information on:**
 - **Eligible applicants, vehicles, equipment and technologies**
 - **Process for receiving an award and how the program works**
 - **One page form for you to fill out – essentially equipment owner contact information**
- **Plus equipment list form. It is important for you to list all your equipment – type of equipment, equipment identification number, engine manufacturer, engine model, HP, annual usage, type of fuel used, etc, etc.**

After applying, then what happens?

Ecology staff will:

- **make a preliminary assessment of your equipment list to determine suitability for retrofitting.**
- **Follow up with a site visit to further assess your equipment and explain technology options and how the program works.**
- **Prioritize your project with other projects.**
- **Determine project budget and available funding.**
- **Notify you of award.**

If you receive an award

- You enter into an MOU with Ecology
- One of our contractors will visit you to do a formal assessment of your equipment. They will work with you to:
 - Determine best technology fitted to your equipment's application and exhaust temperatures
 - Determine best installation configuration
 - Develop and submit a work order to submit to Ecology
 - Deliver and install the technology (or provide training for self installers)
 - Follow up and resolve any issues
- Contractor will invoice Ecology directly once technology is delivered and installed.
- Ecology pays the contractor directly.

What else is being done?

Public and private partners are helping to reduce diesel emissions through voluntary grant and incentive based projects. Projects include:

Exhaust Retrofits

- Washington State Clean School Bus Program
- Local government grants for public vehicles
- Grants for garbage collectors
- Grants for port trucks and cargo handling equipment
- Grants for school bus replacements

Idle Reduction

- Grants to transit authorities for bus idle reduction
- Grant (w/match) to Tacoma Rail for switchyard locomotive idle reduction
- Grant (w/match) to Sound Transit for *Sounder* train idle reduction
- Grants to PUDs for utility vehicle idle reduction
- Grant (w/match) to BNSF for switchyard locomotive idle reduction in Vancouver

Other

- Truck stop electrification at truck stops in WA and OR
- Princess Cruise Line Shore Power Project, Port of Seattle
- NW Ports Clean Air Strategy – Ports of Tacoma, Seattle and Vancouver BC