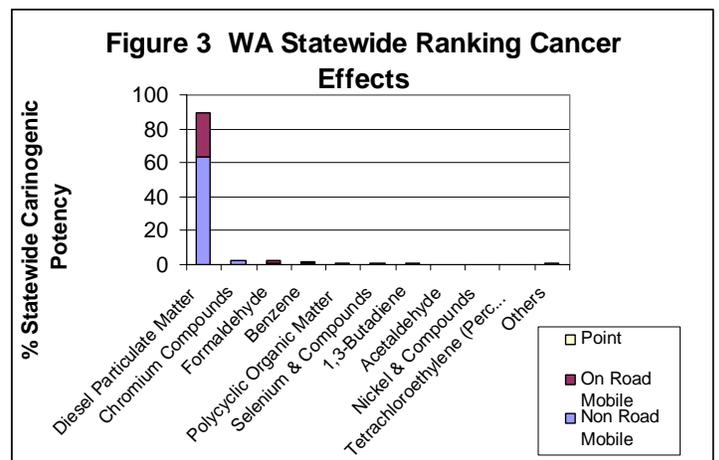
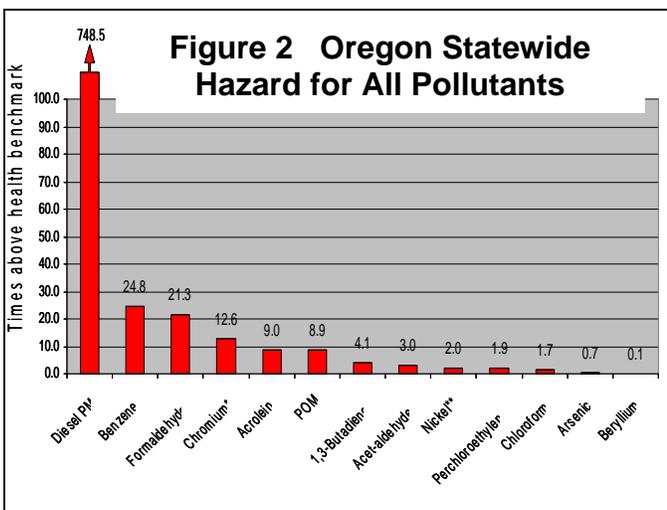
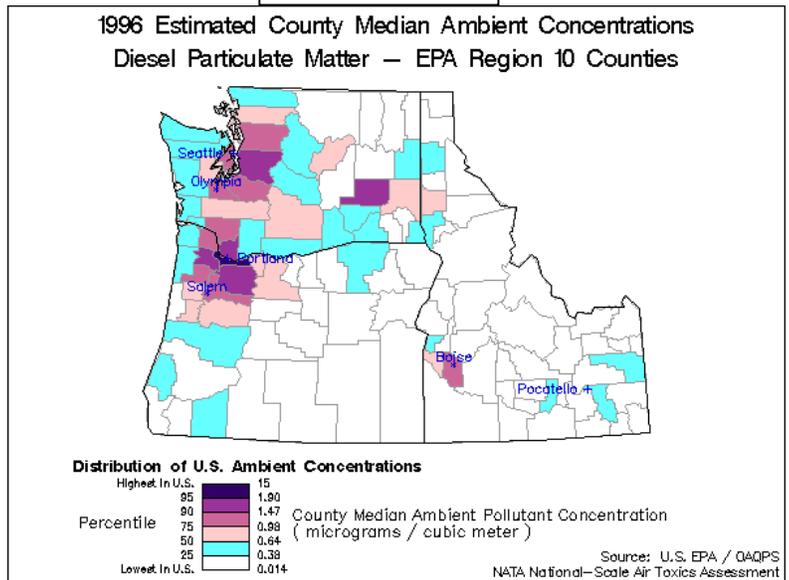


Joint State – EPA Planning

Clean Diesel

Current Conditions: State and local air agencies in Region X, along with many concerned citizens and other private partners, have been very successful in ensuring that air quality in the region is in compliance with the NAAQS. To the extent that control of the classes of criteria pollutants has led to reduced emissions of associated toxics, the risk from air toxics has been reduced. Until recently, however, there has been little evaluation as to whether risk from exposure to ambient air toxics has also been reduced. EPA's 1999 National Air Toxics Assessment indicated levels of concern for excess cancer risk from a number of ambient pollutants. The Assessment showed concentrations for diesel particulate matter were especially high in many locations in the region (Figure 1). Further assessment by state and local agencies in Oregon and Washington indicated that projected cancer risk from diesel was much greater than for any other air toxic or combination of air toxics (Figures 2 and 3).

Figure 1



Trends have not yet been established for diesel particulate concentrations, in part because monitoring specifically for diesel particulate is technically challenging, but also because the baseline for diesel particulate concentrations has only recently been established with the 1999 Assessment, which is based on 1996 emission inventory data. The NATA update, using 1999 data and anticipated for release soon, should allow for additional information on air toxic risks in the region. To the extent that States, locals and tribes are able to update emission inventory data, each subsequent round of the NATA will provide additional information on air toxics risks in the region. Unfortunately, Alaska is looking at cutting investments in emission inventory work, but Idaho, Oregon and Washington should continue to provide updated air toxics emissions inventory data.

Major Problems to be Addressed: Diesel engines form a critical part of the region's economy and significant replacement of these engines is economically unrealistic in the near term. While EPA's 2007 on-road rule will result in major progress, the timeframe for full implementation is projected nationally to be twenty to thirty years. The realization of this benefit could take even longer in Region X as, for instance, the Oregon fleet is about 1.5 years older than the national average. The recent economic downturn, in which capital investment has been depressed, was more acutely experienced in the Pacific Northwest than in other parts of the country and would likely have resulted in the fleet aging even more. The effectiveness of stricter engine certification standards by itself to address the risk posed by diesel particulate will be challenged by a phenomenon also seen in light duty vehicles, where vehicle miles traveled has accelerated at a rate faster than can be accounted for by an increase in the vehicle population. This effect, found with heavy duty diesel vehicles as well, tends to diminish the benefits accrued from advances in pollution controls. This phenomenon underscores the need to deal with in-use diesel vehicles in order to assure protection for public health and the environment.

There are a number of approaches to reducing the emissions impact of heavy duty vehicles, which by and large are diesel powered, including repowering with alternative fuels. However, the "clean diesel" approach is regarded as the most cost effective strategy. It requires the use of a fuel with much lower sulfur contamination than is found in the current highway fuel. This ultra low sulfur diesel provides some emission reduction benefit by itself but more importantly enables the installation of advanced exhaust aftertreatment devices, even on existing vehicles. This combination is effective in reducing the most harmful pollutants found in diesel exhaust by upwards of 95 percent. Biodiesel, a fuel refined from vegetable oils and recycled animal fats, is also an environmentally attractive ultra low sulfur diesel fuel. Typically blended with petroleum diesel because of cost and operational considerations, it can be used to complement other clean diesel approaches.

One of the biggest challenges in addressing diesel particulate risk is the limited regulatory authority over the primary contributors, in-use on-road and non-road diesel powered vehicles. While clean diesel efforts have been promoted by the Puget Sound Clean Air Agency, the Oregon Department of Environmental Quality and other state and local agencies throughout the region for several years already, the focus has been on a voluntary effort, supported by incentives. Several notable successes have been achieved but widespread benefits will require some form of financial assistance, at least for early adopters, to make "clean diesel" a cultural expectation for fleet operators and the public. In the current setting agency efforts to promote

clean diesel effectively represents a large scale marketing campaign for the concept. Therefore agencies will need to look for ways to take advantage of proven marketing techniques in order to be successful. Successful efforts at widespread acceptance and implementation of clean diesel technology will serve as a model for other regions and for other programs in addressing challenging environmental protection needs.

Strategies	Tools & Programs	Measures & Targets
Promote use of ultra low sulfur diesel and biodiesel	Aggregate demand for the fuel through fuel purchase consortiums	Amount of fuel consumed
	* <i>Promotion of fuel use among federal fleets in the region, including military</i>	Amount of fuel consumed
Promote use of ultra low sulfur diesel and biodiesel outside of population centers	* <i>Support state and local efforts to develop fuel market in rural areas by promoting fuel use by railroads and other significant users</i>	Amount of fuel consumed, geographic scope of fuel distribution
Promotion of best available retrofit technology	Promotion of retrofit of exhaust aftertreatment on diesel vehicles and stationary engines in federal fleets in the region, including military. Supplemental Environmental Projects could be used for this purpose.	Number of engines retrofitted
	* <i>Develop protocols for clean diesel recognition program and implement marketing program in support as a national pilot</i>	Support for participants and enhancement of public awareness and support for overall project
	Develop and distribute periodic clean diesel newsletter to fleet operators as an aid in marketing the concept	Reinforcement of messages leading to increased fuel use and retrofiting

Strategies	Tools & Programs	Measures & Targets
Reduce diesel engine idling	Work with states to promote truck stop electrification along the I-5 corridor with an eye to extending efforts to I-90, I-84, I-82 and US97.	<ul style="list-style-type: none"> • Partnership with Region IX and Environment Canada to extend efforts to these adjoining locales. • Number of sites and parking slips covered
	Promote and support efforts to install idle reduction devices on switch engine locomotives	Number of switch engines fitted
	Support efforts to reinforce anti idling policies at schools	Outreach programs developed and implemented
Extend clean diesel efforts to non-road diesels	Encourage EPA HQ to adopt the non-road engine rule and to regulate locomotives and marine engines	Further development of application of clean diesel technologies to non-road engines
	Assist state and local agencies in extending clean diesel efforts to non-road engines, including stationary engines, as opportunities arise	<ul style="list-style-type: none"> • Amount of ultra low sulfur and biodiesel fuel consumed • Number of engines retrofitted
	Incorporate strategy for reducing marine vessel emissions in port and near shore	Partnership with Region IX, Environment Canada, Washington, Oregon and California to support strategies developed through EPA/EC Characterization of Georgia Basin/Puget Sound Airshed Project and West Coast Global Warming Initiative
Secure funding for demonstration projects, especially those that extend range of applications and/or geographic scope	<i>*Encourage and support early adopters by reducing fuel premiums, costs of exhaust controls and/or idle reduction infrastructure</i>	<ul style="list-style-type: none"> • Amount of fuel consumed • Number of retrofits • Idle reduction measures in place

* Priority Actions, the focus will include other tools and programs as additional resources become available.

Interaction with other Region X Priorities: EPA Region X has adopted Six Priorities that cover the entire range of environmental protection and enhancement responsibilities the agency is charged with. In addition to priorities related to water and land quality protection efforts the Diesel Emission Priority Plan has been adopted as one of the Region's Six Priorities. Many of the efforts outlined here are also to be found within the Priority Plan. See <http://yosemite.epa.gov/r10/extaff.nsf/d7b03c22cbc0843588256464006a2ff4/fc3dbd1dd9d2ba8688256c1c0005249b?OpenDocument> for a fuller description of the commitments for upcoming work.

The Northwest Collaborative Air Priorities Project (NWCAPP), hosted by Region X, is designed to take advantage of the knowledge and energy of people who impact and care about air quality in the region. The process is intended to be a truly collaborative effort that will break out of the "government-in-charge" model often used in the past to address air quality concerns. In June of 2003, over 150 representatives from government, industry, communities and nongovernmental organizations assembled at the Northwest Air Summit. Their task was to review the data and information on air quality in the Pacific Northwest and Alaska, establish priorities for reducing risk to human health and the environment, and develop projects which will improve air quality.

The delegates to the Northwest Air Summit reached consensus on the eight priorities, several of which support and relate directly to the clean diesel effort:

- Reduce emissions from transportation especially diesel and carbon dioxide, and support land use planning and alternate transportation as tools.
- Increase support for education and other means of encouraging the public to take actions to reduce air pollution.
- Reduce health risks from outdoor toxic air pollutants, including identification of hot spots and primary contributing sources of toxic emissions.
- Reduce greenhouse gas emissions causing climate change.
- Reduce health risks from toxic and other air pollution where people live, especially in minority, low income, rural, and other under-represented communities.
- Reduce risks to ecosystems, tribal communities, and their cultural resources from toxic and other air pollution sources

For more information about NW CAPP see:

<http://yosemite.epa.gov/r10/homepage.nsf/3061430ee8351cae88256cdb005af493/946930817103ade988256d870080cec6?OpenDocument>