



## WEST COAST COLLABORATIVE

Public-private partnership to reduce diesel emissions

The goal of the Collaborative is to leverage federal funds to strategically reduce emissions from the most polluting diesel sources in impacted communities. The Collaborative seeks to improve air quality and public health by targeting the highest polluting engines with the most cost effective control strategies.

## 2005 Collaborative Demonstration Projects

The West Coast Collaborative is pleased to announce diesel projects totaling over \$1.4 million in Environmental Protection Agency funding and over \$5.8 million in matching funds from Collaborative partners.

The goal of the Collaborative is to leverage significant federal funds to reduce emissions from the most polluting diesel sources in the most affected communities. The Collaborative seeks to significantly improve air quality and public health by targeting the highest polluting engines with the most cost effective control strategies.

### CALIFORNIA PROJECTS

#### Construction Equipment Retrofit Demonstration Project

EPA is providing a \$211,000 grant to the Sacramento Metropolitan Air Quality Management District with over \$774,000 in matching funds. This project will demonstrate the effectiveness of two different types of emission control devices on five pieces of construction equipment. These devices are expected to reduce particulate matter emissions by over 85 percent, and to the extent possible, reduce nitrogen oxide emissions by up to 25 percent and carbon monoxide emissions by up to 90 percent.\* The project will enable both control devices to be approved (or verified) under EPA and California's retrofit programs.

#### Cleaner Biodiesel for Farm Equipment Demonstration Project

EPA is providing a \$100,000 grant with \$160,000 in matching funds to Sustainable Conservation, a nonprofit organization based in the San Joaquin Valley. This project will test the effectiveness of a fuel additive in agricultural equipment that reduces nitrogen oxide (NOx) from biodiesel. Anticipated emissions reductions are a 10 percent for carbon monoxide, 15 percent for particulate matter, 10 percent for hydrocarbons, and 20 percent for sulfates. Most importantly,

although there is typically a small increase in NOx from biodiesel, there is no increase in nitrogen oxide emissions with this additive.

#### Clean Air Partners Transportation System Liquefied Natural Gas Short Line Locomotive Project

EPA is providing a \$100,000 grant to the South Coast Air Quality Management District, with over \$2.1 million in matching funds. The project will reduce diesel emissions from both trucks and locomotives and reduce truck traffic congestion between the Ports of Los Angeles and Long Beach. This will be accomplished by retrofitting an existing locomotive to operate primarily on cleaner-burning liquefied natural gas (LNG) and using this locomotive to offset diesel truck traffic as part of a larger clean transportation system. The overall project is expected to reduce annual emissions of nitrogen oxides by approximately 17 tons and particulate matter by 860 pounds.

#### Advanced Locomotive Emission Control System

EPA is providing a \$39,000 grant to the Placer County Air Pollution Control District, with matching funds of over \$100,000 by other Collaborative partners. This project will utilize conventional stationary source emission control equipment to treat emissions from locomotives in the service area of the Roseville rail yard. The emissions will be captured by placing a bonnet over the exhaust stacks of the locomotives while they are being serviced. This project will demonstrate the performance of the equipment on locomotive engines and verify the design of the bonnet and other equipment components. Use of this emission control system is expected to reduce annual emissions of nitrogen oxides by approximately 103 tons and particulate matter by 2 tons.

#### Truck Fleet Idle Reduction Demonstration Project

EPA is providing a \$100,000 grant to the Sacramento Municipal Utility Planning District (SMUD), with matching funds of \$117,753. This project will install idle reduction technology on a fleet of five John Christner Trucking vehicles that primarily travel the I-5 corridor and will install the necessary infrastructure to use this technology at local terminals and travel plazas. The trucks will be retrofitted with technology that allows them to "plug in" while resting at terminals and travel plazas rather than rely on engine power. This project is expected to reduce annual emissions of nitrogen oxides by 1.58 tons and particulate matter by 47 pounds; reduce fuel consumption

annually by 8 percent; and save approximately \$4,000 in fuel costs per truck.

### Cruise Liner Emissions Reduction Incentives Project

EPA is providing a \$100,000 grant to the Port of San Francisco, with \$141,000 in matching funds. This project will enable the port to provide monetary incentives for cruise ships to burn cleaner, lower sulfur fuels while they are docked at the port. The port's incentives will reduce the cost of the lower sulfur fuels for the cruise ships and lower their overall fees while docked in San Francisco. The project will reduce sulfur dioxide emissions by an estimated 39 tons over the course of the project.

### Liquefied Natural Gas Port Equipment Demonstration Project

EPA is providing a \$75,000 grant to the Port of Long Beach and Weststart/CALSTART, with \$525,000 in matching funds. This project will reduce diesel emissions at the port by retrofitting three new yard hostlers at the Long Beach Container Terminal's Pier F facility with liquefied natural gas engines and testing their relative power and effectiveness for six months. Yard hostlers are small "off-road" trucks used to ferry containers within a container cargo terminal. This project is anticipated to reduce yard hostler emissions by 63 percent for nitrogen oxide and 80 percent for particulate matter.

### Diesel Agricultural Pump Efficiency Project

EPA is providing a \$50,000 grant to the Center for Irrigation Technology, California State University, Fresno, with \$25,000 in matching funds. This project will provide low-cost pump efficiency tests, retrofit research, and incentive rebates for retrofit and repair of inefficient agricultural pumps in the San Joaquin Valley. The project will annually reduce nitrogen oxide emissions by an estimated 19.8 tons.

## OREGON PROJECTS

### I-5 Truck Idle Reduction Rebate Project

EPA is providing a \$100,000 grant to the Oregon Department of Energy, with \$120,000 in matching funds. This project will install idle reduction technology on 60-100 trucks in Oregon that travel along the I-5 Corridor to reduce harmful diesel emissions and reduce fuel consumption. The project will complement other projects, such as Oregon Diesel Solutions, to develop the necessary infrastructure at rest stops, terminals and transfer stations, to significantly reduce unnecessary idling along the West Coast. This project will reduce an estimated 80 tons of nitrogen oxide, 2.4 tons of particulate matter and 5,640 tons of carbon dioxide over a five-year period.

### Cleaner Fuel for Bridge Construction Project

EPA is providing an \$80,000 grant to the Lane Regional Air Pollution Authority, with \$120,000 in matching funds. This project provides a 5-cent per gallon fuel discount to bridge contractors who purchase cleaner fuel, such as ultra-low sulfur diesel or a biodiesel blend, for their construction equipment. Construction equipment—including

cranes, paving trucks, and bulldozers—typically emits high levels of toxic air pollutants like sulfur oxides (which cause chest pain, coughing, and shortness of breath) and 40 or so other known or suspected carcinogenic substances.

### Construction Equipment Emissions Reduction Project

EPA is providing a \$26,000 grant to the Oregon Environmental Council, with \$27,000 in matching funds. This project will reduce diesel emissions from construction equipment used in the City of Portland by at least 20 percent through diesel engine retrofits, cleaner fuels, and idle reduction policies. Once evaluated, the project's most efficient methods may be applied towards reducing construction equipment emissions along the West Coast.

## WASHINGTON PROJECTS

### The Bio 49 Degrees Project

EPA is providing a \$70,000 grant to the Northwest Energy Technology College and Washington Technology Center, with \$356,256 in matching funds. This project will convert food waste oil into biodiesel for utility line trucks that operate along the US/Canadian Border. The project will help utilities purchase biodiesel by reducing its cost and outfitting 26 Puget Sound Energy trucks in the region. The project will also launch a public education program about biodiesel and will hire students to run the biodiesel processors as part of their class curriculum. The project will reduce emissions of particulate matter by 31 percent, carbon dioxide emissions by 24 percent, and hydrocarbons by 50 percent.

### Puget Sound Maritime Air Emissions Inventory & Diesel Emissions Reduction Project

EPA is providing a \$100,000 grant to the Puget Sound Maritime Air Forum, with \$310,000 in matching funds. This project will create an activity-based inventory of all maritime-related air emission sources in the Greater Puget Sound region. This project will then promote the use of control technologies like diesel oxidation catalysts, cleaner fuels like ultra-low sulfur diesel and biodiesel, and public education activities such as idle reduction programs for truckers and equipment operators at the seaport to reduce overall emissions.

### Port of Seattle Diesel Emissions Reduction Project

EPA is providing a \$35,000 grant to the Port of Seattle, with \$70,000 in matching funds, to implement over 30 projects that are identified as priorities in the emissions inventory project mentioned above.

### Eastern Washington Farmers Diesel Emissions Reduction Project

EPA is providing a \$100,000 grant to the Upper Columbia Resource Conservation & Development Council, with \$400,000 in matching funds. This project promotes no-till/direct seeding techniques to

farmers by offering them cash incentives to offset the initial costs of necessary tractor modifications. The project will educate approximately 9,800 farmers about the no-till/direct seeding technique and convert 16,000 square acres to the new system. The project will conserve an estimated 56,660 gallons of diesel fuel, and reduce annual emissions of nitrogen oxides by 100.38 tons, particulate matter by 7.12 tons, carbon monoxide by 21.63 tons, sulfur oxides by 6.64 tons, and volatile organic matter by 8.14 tons.

#### \* Health and Environmental Impacts of Diesel Emissions

**Nitrogen oxides (NOx):** contribute to ozone (smog) and impair lung function.

**Particulate matter (PM):** exacerbates existing respiratory and cardiovascular illnesses. Particles smaller than 2.5 $\mu$  (microns) are especially harmful because they may lodge into the lungs' inner recesses and cause infection and compromise the immune system.

**Carbon Monoxide (CO):** affects the central nervous system and causes shortness of breath and chest pain.

**Hydrocarbons:** may be carcinogenic and inhibit the immune system.

**Carbon Dioxide (CO<sub>2</sub>):** contributes to global warming and climate change.

**VOM (Volatile Organic Matter):** contains toxic substances that are shown to be carcinogenic.

**Sulfur oxides (SOx):** contribute to ozone (smog) and impair lung function