

FY 2009 RESEARCH PROBLEM STATEMENT

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TITLE

GHE-09-02 Determine Diesel Fuel Consumption Savings and Carbon Emission Reductions Attributed to the Green Light Weigh Station Preclearance Program

PROBLEM (Description of need)

Oregon's Green Light commercial vehicle preclearance program has significant economic and environmental benefits to the State. Expansion of this program is limited by available funding. If emission benefits can be quantified by research, new sources of funding may become available for expansion of the program.

What are some of the benefits of avoiding all those weigh station stops? One way to estimate benefits is to use a truck's cost per mile calculation developed by the American Trucking Associations. In 2003, it was estimated that operating a heavy truck cost \$2.80 per mile. Among other costs, that included 0.551 per mile for driver wages, 0.804 for other wages and benefits, 0.198 for fuel, and 0.651 in equipment rents and purchased transportation. Factoring the ATA's estimated \$2.80 per mile cost with its estimate that trucks average 42 miles per hour from point of origin to delivery equates to a cost of \$1.96 per minute. Operating costs vary widely in the trucking industry. But if operating a truck costs \$1.96 per minute and avoiding a weigh station stop saves five minutes, for every million trucks precleared by Green Light the trucking industry saves \$9.8 million in operating costs and more than 83,300 hours of travel time. To date Green Light has precleared almost 9 million trucks.

Using U. S. Environmental Protection Agency emission modeling software, the Oregon Department of Environmental Quality estimates that Green Light yields a 26.6 percent reduction in four health impact pollutants regulated by the Clean Air Act. These pollutants include Volatile Organic Compounds (VOC), Carbon Monoxide (CO), Nitrogen Oxides (NOX), and Particulate Matter (PM10). Oregon DEQ cautions these are "reasonable estimates". Emissions testing with quantifiable results are necessary for funding proposals. Further, a calculation for carbon dioxide emissions reduction is required. Oregon DEQ is unable to provide estimates.

PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY

The proposed research will measure diesel fuel consumption and allow for a calculation to determine the amount of fuel conserved by Green Light. The research will also measure reductions in emissions attributed to allowing large commercial vehicles to bypass weigh stations utilizing Green Light technology. Testing would firmly establish these benefits of Oregon's Green Light Program.

BENEFITS

Research will assist ODOT in meeting the goals of a sustainable Oregon for the 21st century. Specifically this research will assist in the goal to reduce engine idling and large truck emissions. The MCTD proposes a sustainability performance measure for ODOT. This performance measure is tied to the Green Light Program and requires a determination of emission reduction due to allowing large trucks to bypass Oregon weigh stations.

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