



The Gateway Cities Fleet Modernization Program: Progress and Challenges

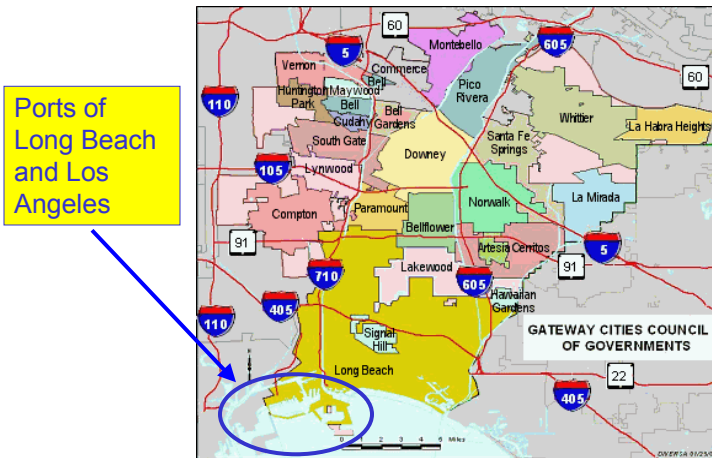
*Richard Powers, Executive Director
Gateway Cities Council of Governments
January 31, 2006*



The Gateway Cities Sub-Region

- Southeast Los Angeles County
- 27 cities plus the County of Los Angeles and the Port of Long Beach
- More than 2 million people live in the sub-region
- Larger than 26 states

The Gateway Cities Sub-Region (cont.)



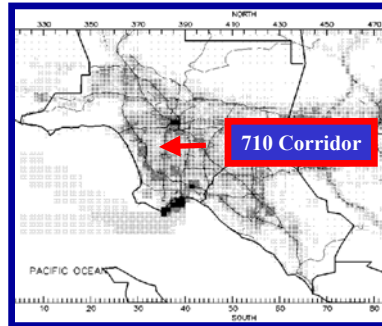
What is Our Mission as a Council of Governments?

- Transportation
- Air Quality
- Economic Development
- Housing / Sub-Regional Planning

How Did We Get Into a Major Diesel Truck Replacement Program?

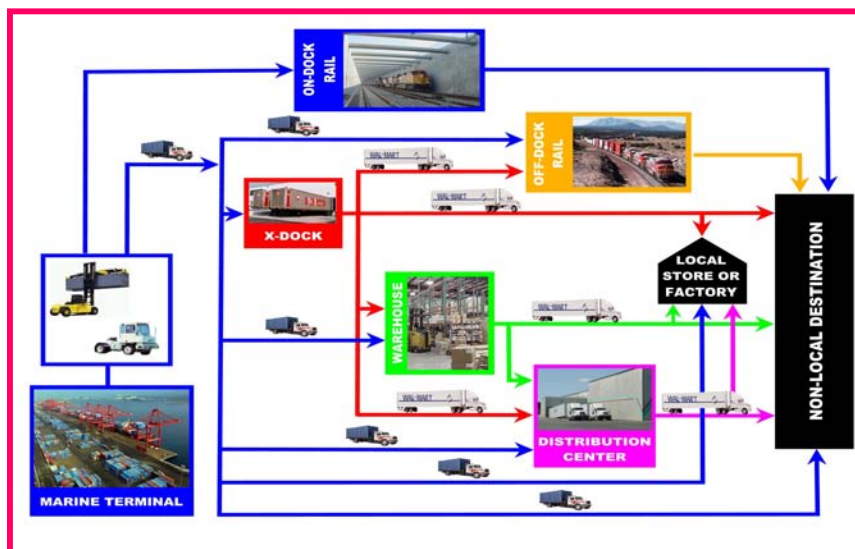
- (1) The publication of the MATES II Study by the South Coast AQMD
- (2) Realization of the magnitude of diesel trucks moving through our cities and neighborhoods
 - Today: 35,000 trucks from the Ports move through our cities each day
 - 90,000 to 100,000 by the Year 2030
- (3) Realization that a highly-polluting 1980's truck can stay on the roads another 10+ years

MATES II Study



Darkest Areas = > 60 Kg/day of PM_{2.5}

Heavy-Duty Trucks are a Key Link Throughout the Goods Movement Logistics Chain



Overview of the Gateway Cities Program

- The program goal is to deal with existing public health issues NOW by reducing diesel truck emissions in the near term

Three Program Elements:

- Diesel Truck Replacement, “Fleet Modernization” (Existing)
- Off-road Equipment at Port of Long Beach (Existing)
- Retrofitting of Diesel Emission Control Systems (Initiated)

The Gateway Cities Fleet Modernization Program reduces emissions from **in-use** on-road heavy-duty diesel vehicles



Typical pre-1987 truck



Typical 1999 or newer truck

- ▶ Old trucks (pre-1987) having little or no emissions controls are scrapped and **REPLACED** with cleaner, newer trucks
- ▶ These “replacement trucks” are **RETROFITTED** with devices that provide additional emissions reduction benefits
- ▶ **REFUELING** strategies (e.g., alternative fuels) are being considered to obtain even greater emissions reductions

Gateway Cities Fleet Modernization

- Incentive-based, voluntary program
- Amount of the incentives varies depending on specifics of the proposal (old truck, new truck, annual mileage over the previous two years)
- Owner pays about one third of total cost for the replacement truck
- Awards are capped according to cost effectiveness limits
- The old truck's engine and chassis are permanently destroyed



Gateway Cities Program truck undergoing scrapping process

Benefits of Gateway Cities Fleet Modernization Program

- Addresses big challenge: how to get emission reductions from [in-use diesel fleet](#)
- Accelerates retirement of oldest, dirtiest heavy-duty trucks
- Helps truckers who otherwise could not afford a newer truck, and reduces their fuel costs
- Supports early implementation of CARB's objective to retrofit all in-use heavy-duty trucks with PM-reduction devices
- Focuses on the [GOODS MOVEMENT](#) chain, which is dependent on large numbers of pre-1987 trucks
- Tends to correlate well with Environmental Justice objectives (oldest trucks frequently operated in and around areas of low socioeconomic status)

How Much Emission Reduction Have We Achieved?

- Current estimated average emission benefit: **0.50** tons of NO_x and **0.11** tons of PM per truck, per year (without retrofit device)

	NO _x	PM
Emission Benefit Per Truck (tons/yr)	0.50	0.11
5-yr Emission Benefit Per Truck (tons)	2.5	0.55
5-yr Emission Benefit for 373 Trucks (tons)	932	205

Overview of per-Truck Air Quality Benefits from Fleet Modernization

Based on CARB's latest emissions factors:

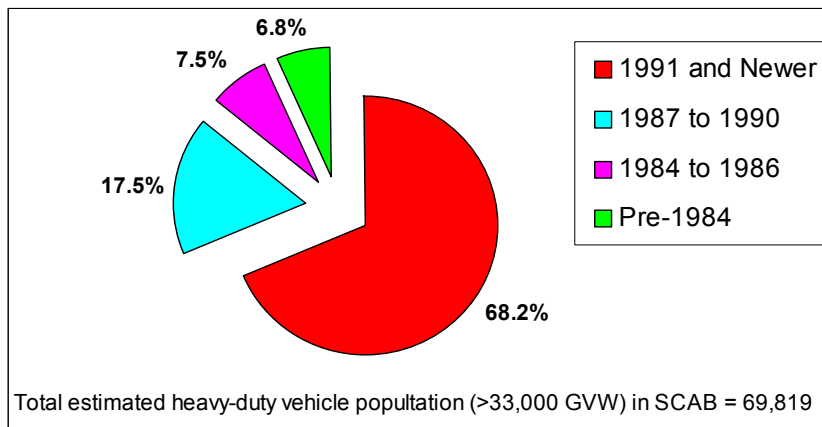
- Compared to the pre-1987 truck that it replaces, a typical newer truck ('99 to '02 model year) emits
 - 30% less NO_x per mile
 - 3 to 4 times less particulate matter (PM) per mile
 - 5 to 6 times less reactive organic gases (ROG) per mile
- **Retrofitting with an aftertreatment device** provides further reductions in toxic PM emissions
- Details about specific emissions reductions achieved under the Gateway program will be presented in Wednesday's session (**Port of Los Angeles On-Road Truck Program, administered by Gateway**)

Gateway Cities Fleet Modernization Program: Accomplishments to Date

- Program began in September 2002
- Approximately \$10.4 million in grant funds have been expended to scrap and replace **373** pre-1987 trucks
 - **\$3.1 million / 120 trucks** - original program funded by ARB, EPA and MSRC
 - **\$6.3 million / 253 trucks** – special program funded by the Port of Los Angeles
- Since mid 2005, all replacement trucks are receiving installation of:
 - **A retrofit device** to further reduce PM emissions by ~37%
 - **A GPS-based “Automatic Vehicle Locator”** to track actual mileage within and outside the South Coast Air Basin
- Technical details and estimates for emissions reduction will be presented in Wednesday’s on-road truck session (Port of Los Angeles funded program)

How many more old trucks are out there?

It is estimated that about 15% of the heavy-duty Class 8 trucks in the South Coast Air Basin are at least 20 years old (**purple** and **green** slices). This equates to about 10,000 vehicles.

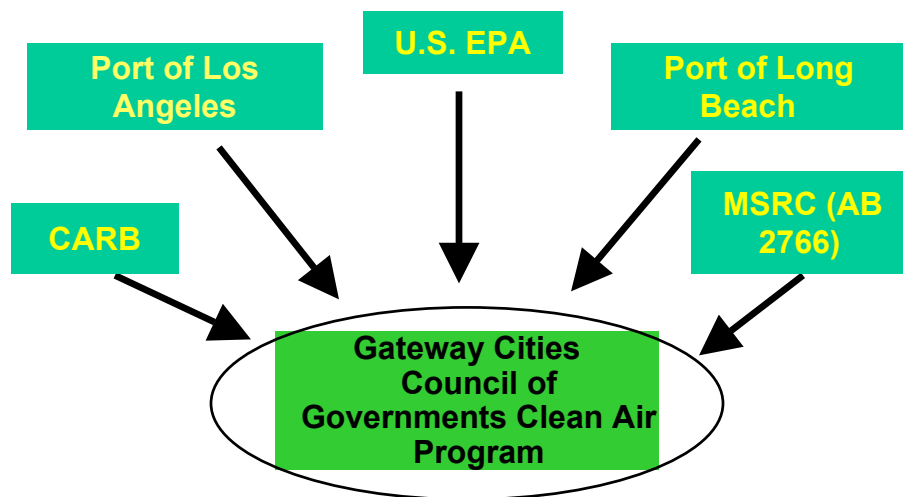


Source: EMFAC runs provided by the South Coast AQMD

Gateway Cities Fleet Modernization Program: **Example Implementation Challenges**

- Fleet modernization applicants tend to be truckers in port drayage and goods movement vocations
 - Most are non-English-speaking “independent owner-operators” who receive marginal compensation after purchasing fuel, etc.
 - Such truckers are naturally motivated to use their newer, more-reliable truck to move into a more-lucrative trucking vocation . . .
 - But, the Program requires them to stay in the same vocation and drive 85% of their miles in the SCAB, for 5 full years

Current Funding Structure for the Gateway Cities Clean Air Program



Conclusion and Next Steps

- The Gateway Cities Fleet Modernization Program continues to be a very successful pilot program that is receiving national attention and interest
- Very significant, cost-effective emission reductions are being achieved (details to be provided in Wednesday's on-road trucking session)
- The potential universe for Fleet Modernization in the South Coast Air Basin is large (an estimated 10,000 pre-1987 trucks)
- Changes are now being implemented in preparation for the 2006 program and beyond
 - Normalize with the new Statewide Carl Moyer fleet modernization source category
 - Implement upgrades specific to the funding agencies

Thank You!

For complete details about the Gateway Cities Clean Air Program, including the Fleet Modernization element, contact:

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