



GATEWAY CITIES  
COUNCIL OF GOVERNMENTS



# The Gateway Fleet Modernization Program

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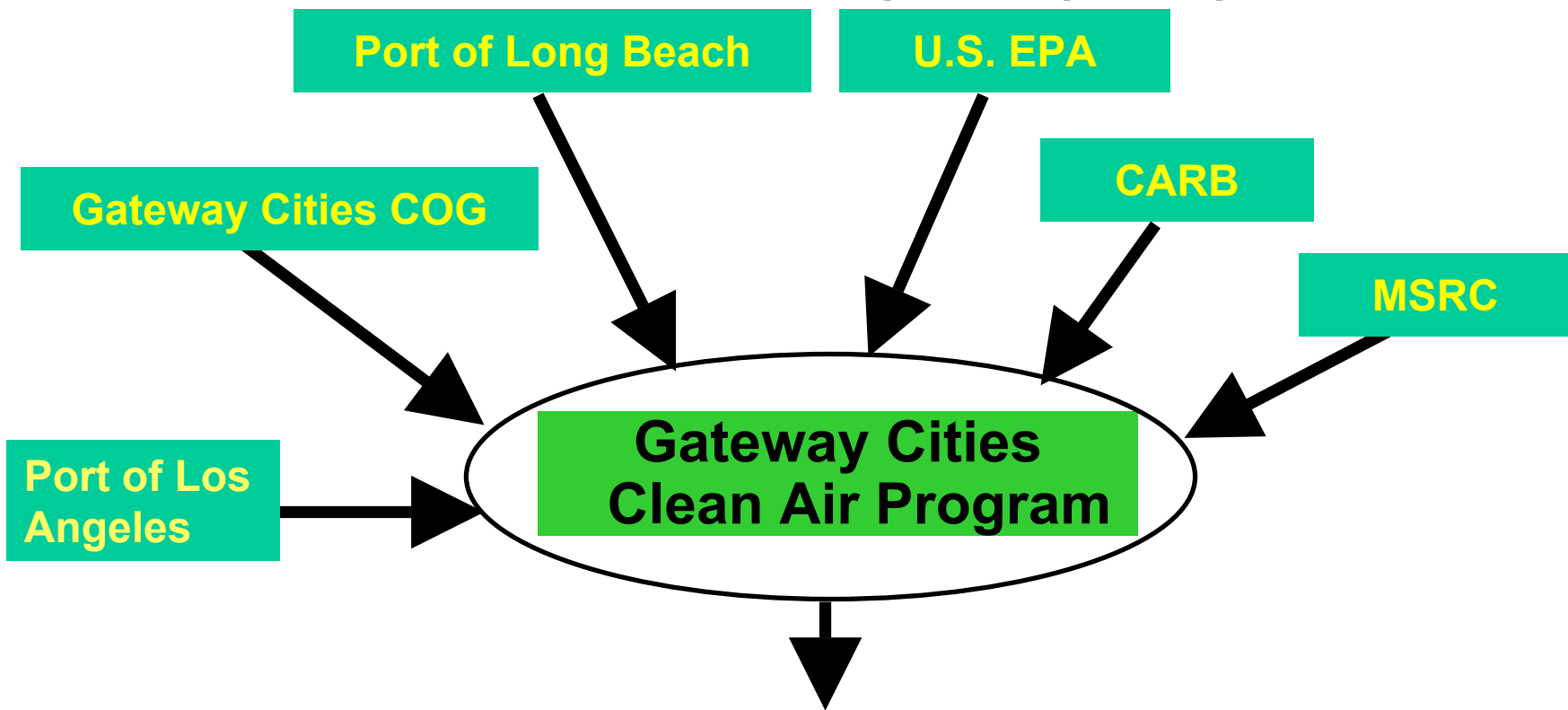
# The Gateway Cities Sub-Region

- Comprised of **27 cities** in southeastern Los Angeles County and the Port of Long Beach
- More than **2 million people** live in the sub-region
- Industrial heartland of Los Angeles County
  - Manufacturing, warehousing, and trucking dominate the economy
  - POLB / POLA area is North America's busiest port complex
- More than **32,200 diesel truck trips** occur in and out of these two ports ***each day***
- A large percentage of these trucks are pre-1987 vintage that pre-date any emissions control systems
- Gateway Cities Council of Governments (a joint powers authority) mission: : **Attract Economic development, Enhance Mobility, and Improve Air Quality**

# The Gateway Cities Subregion



# Current Funding Structure for the Gateway Cities Clean Air Program (CAP)



## Three Program Elements:

- Diesel Truck Fleet Modernization (**Existing**)
- Off-road Equipment at Port of Long Beach (**Existing**)
- Retrofits and/or PM Traps on Fleet Vehicles, Accelerated use of Low Sulfur Diesel Fuel (**Initiated**)

# The CAP takes near-term actions to reduce emissions from **in-use** heavy-duty diesel vehicles



## The 5 “Rs” of Reducing In-Use HDV Emissions:

Type of "R"	Corresponding Element of the Gateway Cities CAP
Replace	Fleet Modernization: Pre-1987 Trucks Scrapped
Repair / Rebuild	Fleet Modernization: All 1994 to 1998 Trucks Get Low-NOx Chip Reflash
Retrofit	Port of Long Beach: DOCs on Port Equipment
Refuel	Port of Long Beach: Use of Diesel Emulsion Fuel
Repower	Fleet Modernization: Allows Repower or Complete Truck Upgrade

# Gateway Cities Clean Air Program

- Program elements implemented to date:
  - **Fleet Modernization Program**
    - Replacement of pre-1986 trucks with 1999 and newer trucks
    - Mandatory low-NOx chip reflash on 1994-1998 replacement trucks
  - **Port of Long Beach On-site Emission Reductions**
    - Terminal operators equip HDVs with two types of diesel oxidation catalysts
    - Some HDVs also operate on emulsion fuels

# 1. Clean Air Program: Fleet Modernization

- Incentive-based, voluntary program
- Incentives average \$25,000 per truck
- Owner pays about one third of total truck cost
- Old truck engine and chassis are permanently destroyed
- Trucker **saves greatly on fuel costs** due to more efficient engines



*Gateway program truck undergoing scrappage process.*

# Benefits of Gateway Fleet Modernization Program

- Immediate emission reductions from in-use diesel fleet -- as strongly sought under the AQMP and SIP
- One of our biggest challenges addressed: In-use pre-controlled heavy-duty trucks with many years of remaining operating life
- Helps truckers who otherwise could not afford a newer truck and saves them fuel costs
- Resulted in **low-NOx chip reflash** for applicable trucks ('94-'98 MYs) ahead of ARB's new regulation

# Overview of Fleet Modernization Benefits, and Goal for Expansion

- Typical replacement truck emits about 40% less NOx and 85% less PM (on a grams-per-mile basis)
- For each truck replaced, the program reduces 0.3 - 0.8 tons of NOx and 0.09 - 0.20 tons of PM, **each year** for the five-year award life
- Average estimated five-year reduction per truck: 1.5 - 4 tons of NOx and 0.45 - 1.0 tons of PM
- Program goal: replace 3000 pre-1987 trucks over the next two years
- Estimated cost: \$84.5 million, \$17.5 million in hand

# Estimated Emission Reduction Benefits by Funding Scenarios (Fleet Modernization Alone)

	Awards to Date	Currently Available Funding	2 Year Goal
<b>Funding Scenario</b>	\$ 8,757,000	\$ 17,540,000	\$ 84,500,000
<b>Number of Trucks Replaced</b>	351	700	3,000
<b>Estimated Annual NOx Reductions (Tons)</b>	193	385	1,650
<b>Estimated Annual PM-10 Reductions (Tons)</b>	42	90	360

**Notes:**

- All estimates are based on the best information that is currently available. Actual emissions benefits will be calculated at conclusion of the project useful lives (5-years).
- Emission reductions are estimated using EMFAC 2002 and averages from awards to date for truck model years, baseline SCAB miles, etc.
- Emissions reduction estimates assume 5-year operating life of truck; it is likely that these trucks will be in service far beyond 5 years.

# Conclusion and Next Steps

- The GCCOG / POLB Clean Air Program is a very successful pilot program, which has begun receiving national attention and interest
- **Very significant, cost-effective\* emission reductions**
  - approximately \$8,700 per ton of NOx
  - approximately \$36,000 per ton for PM
- Market for the Fleet Modernization program is large (an estimated 6,000 pre-1984 trucks in LA County)
- POLB's Diesel Emissions Reduction Program is well underway with retrofitting of on-site equipment

\*Refers to Fleet Modernization; estimates are conservative – assume only five yr. life for replacement trucks, most of which are 1998 or newer