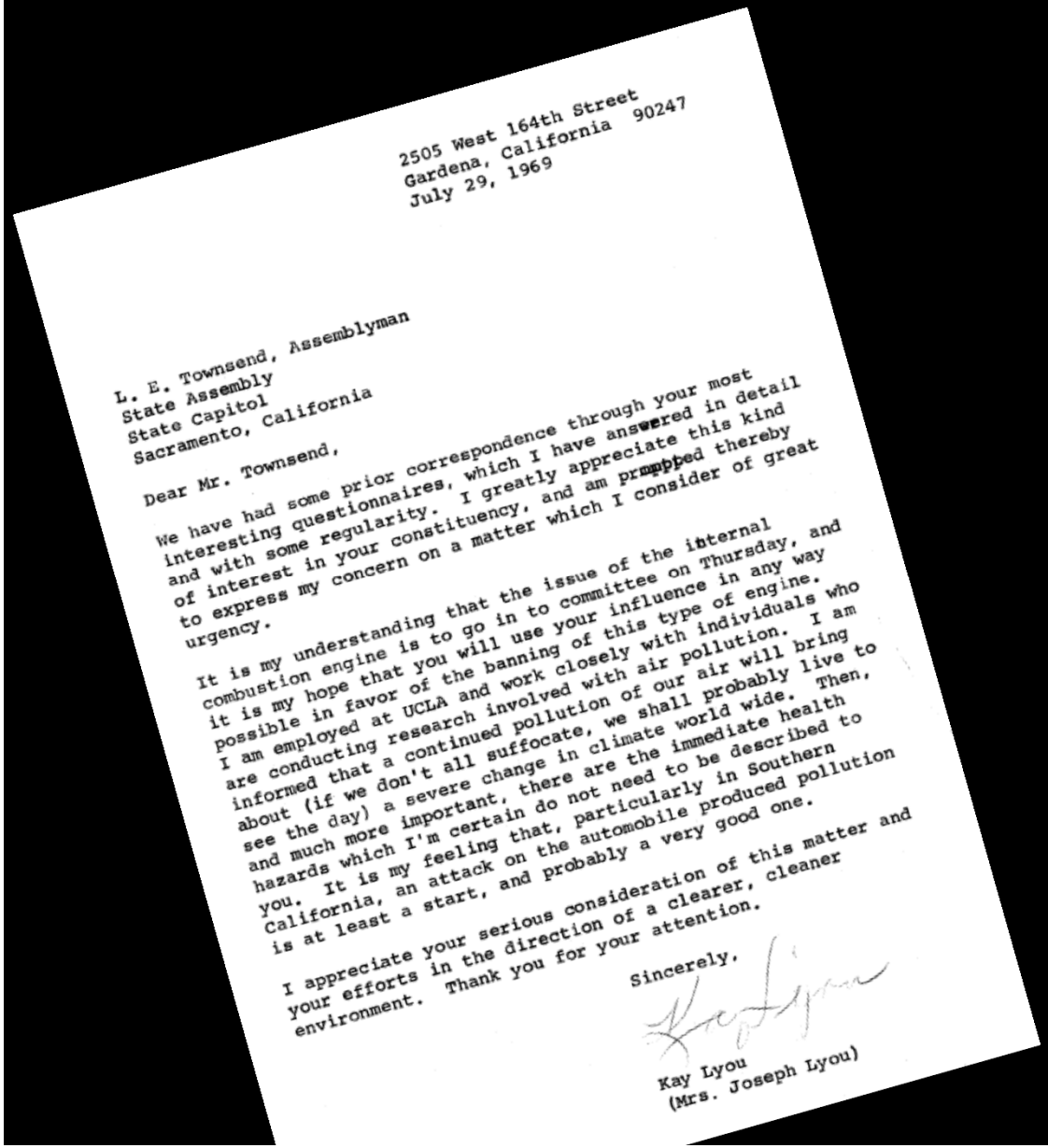
Air Pollution 101

Joseph K. Lyou, Ph.D.

President & CEO
Coalition for Clean Air

Governor's Appointee
South Coast Air Quality Management District
Governing Board

Listen to ~~Your~~ *My* Mother



2505 West 164th Street
Gardena, California 90247
July 29, 1969

L. E. Townsend, Assemblyman
State Assembly
State Capitol
Sacramento, California

Dear Mr. Townsend,

We have had some prior correspondence through your most interesting questionnaires, which I have answered in detail and with some regularity. I greatly appreciate this kind of interest in your constituency, and am prompted thereby to express my concern on a matter which I consider of great urgency.

It is my understanding that the issue of the internal combustion engine is to go in to committee on Thursday, and it is my hope that you will use your influence in any way possible in favor of the banning of this type of engine. I am employed at UCLA and work closely with individuals who are conducting research involved with air pollution. I am informed that a continued pollution of our air will bring about (if we don't all suffocate, we shall probably live to see the day) a severe change in climate world wide. Then, and much more important, there are the immediate health hazards which I'm certain do not need to be described to you. It is my feeling that, particularly in Southern California, an attack on the automobile produced pollution is at least a start, and probably a very good one.

I appreciate your serious consideration of this matter and your efforts in the direction of a clearer, cleaner environment. Thank you for your attention.

Sincerely,

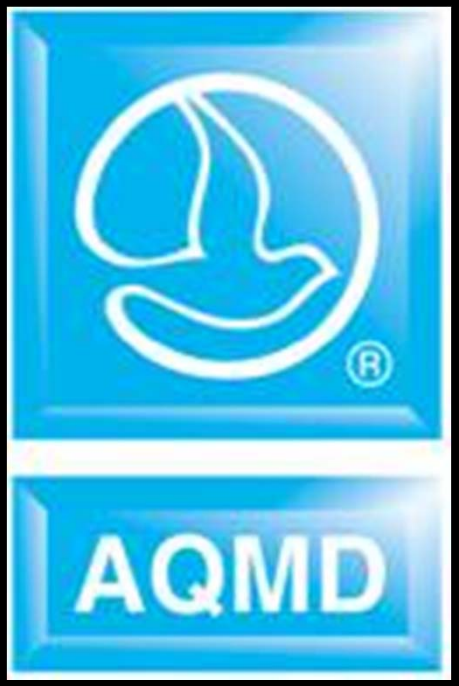
Kay Lyou
(Mrs. Joseph Lyou)

"…it is my hope that you will use your influence in any way possible in favor of the banning of this type of [internal combustion] engine."

July 1969

COALITION FOR

CLEAN AIR



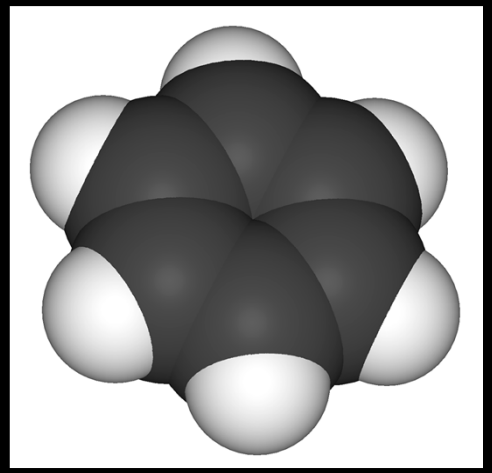
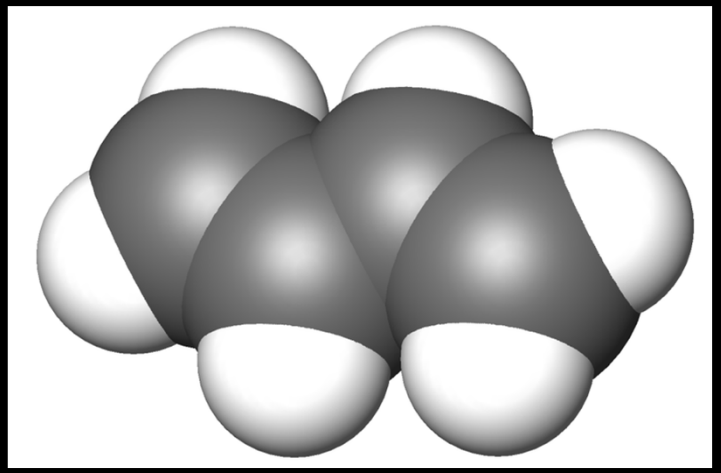
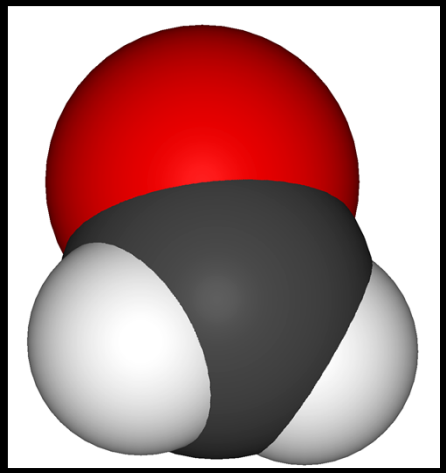
Main Messages

- Air pollution is bad.
- We need clean car regulations.

The 3 Types of Air Pollution

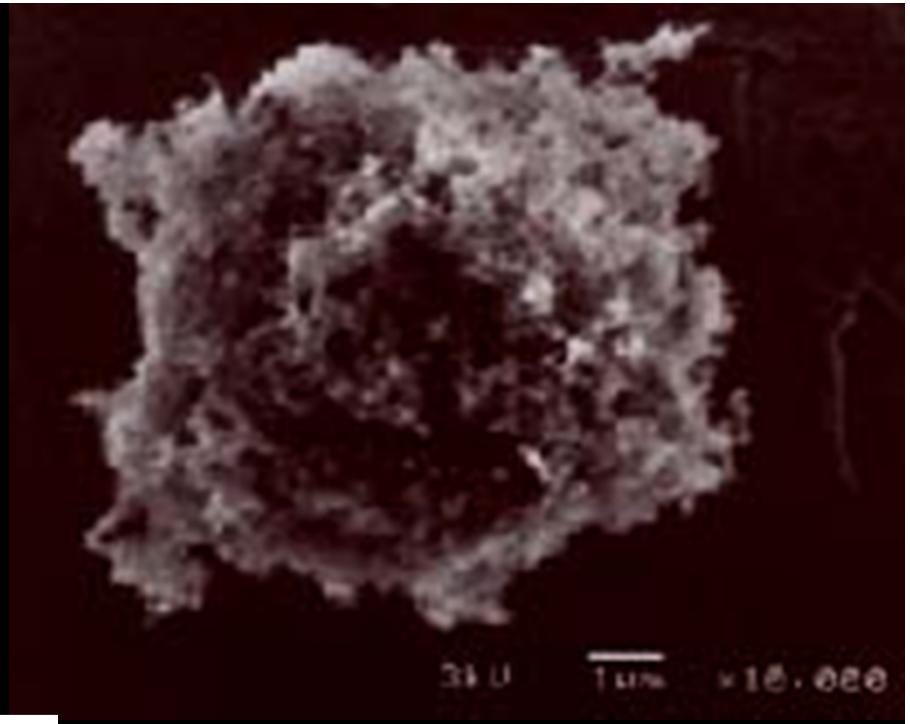
- Local Impacts - Toxics
- Regional Pollutants - Smog
- Climate Change - GHG

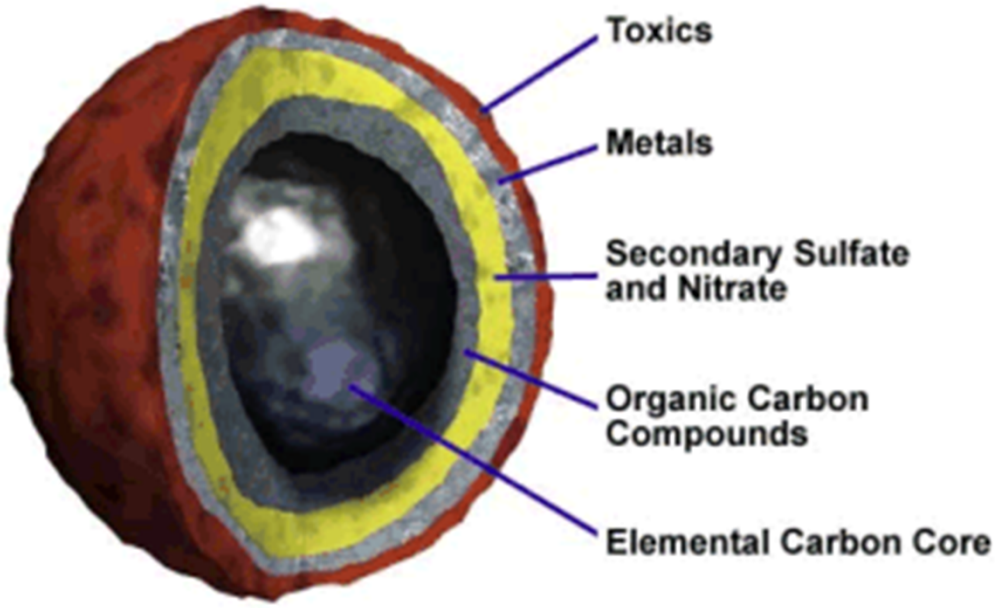
Toxic Auto Exhaust

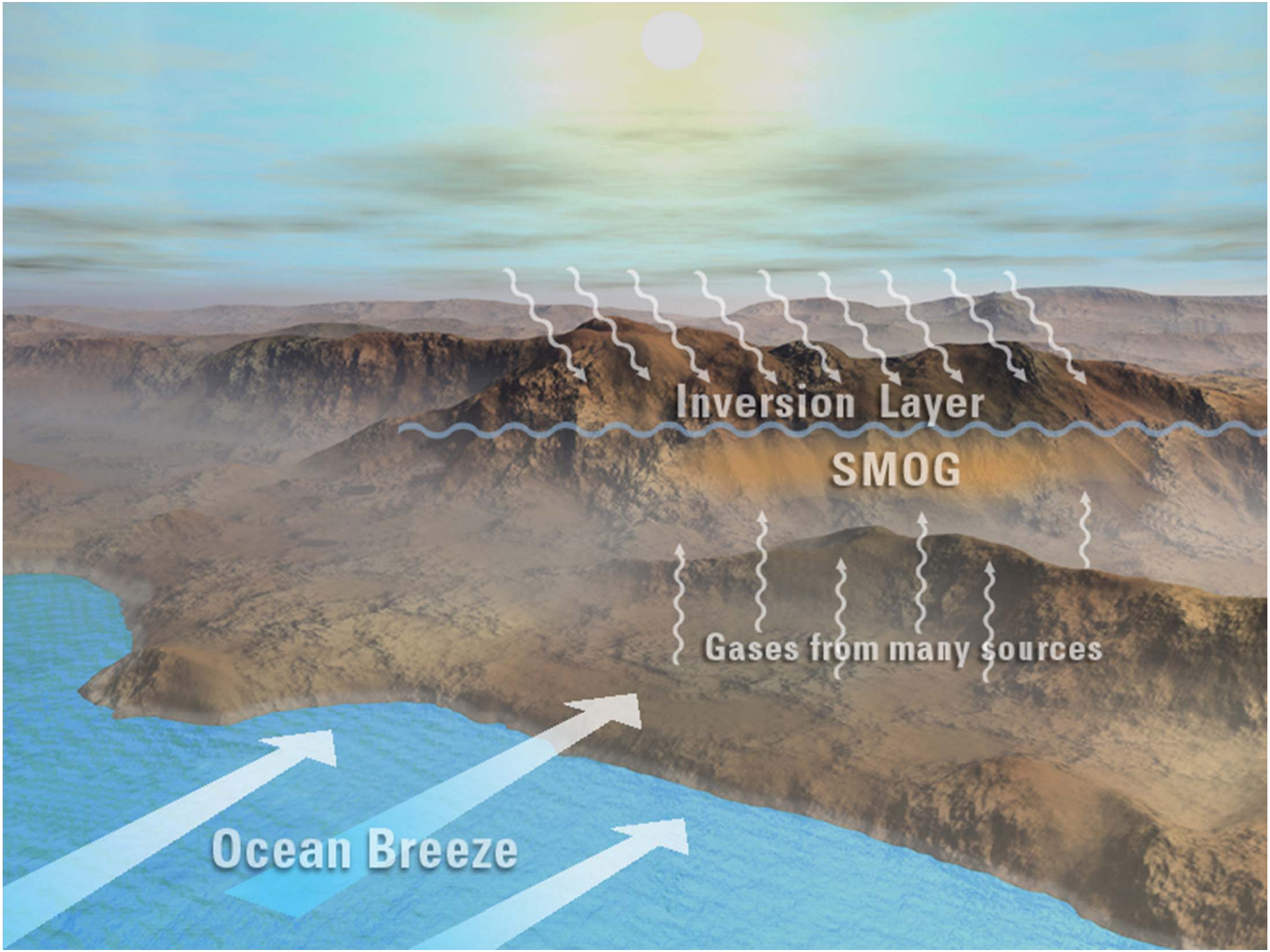




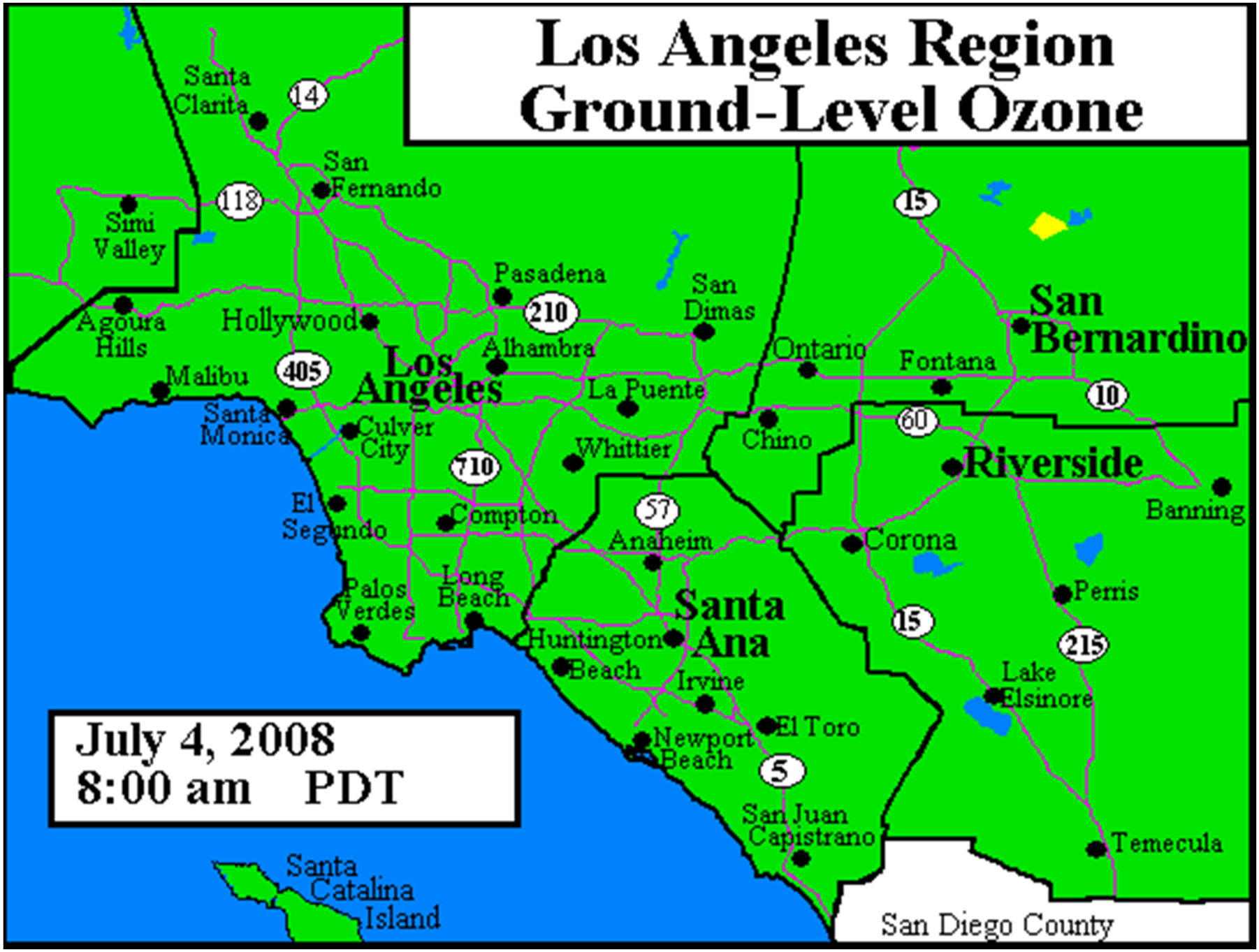
Benzene, 1,3-Butadiene, Formaldehyde, Acetaldehyde, Toluene, Xylenes, Sytrene, Ketones, Phenols, PAHs, Chromium, Mangesium, Mercury, Nickel, etc.

Black Carbon / Soot





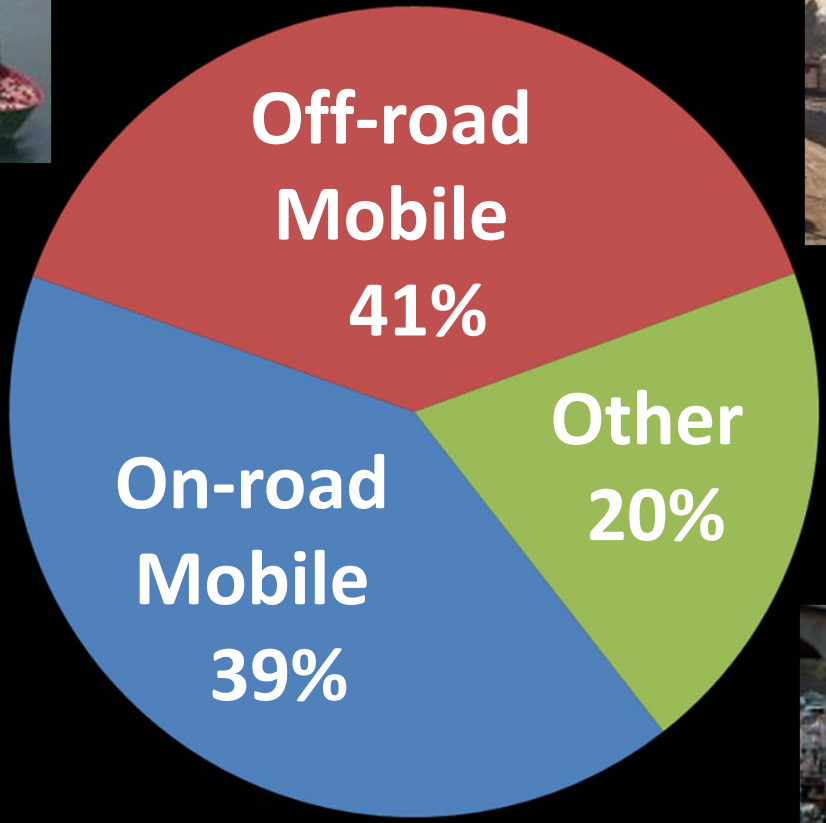

Inversion Layer
SMOG
Gases from many sources
Ocean Breeze

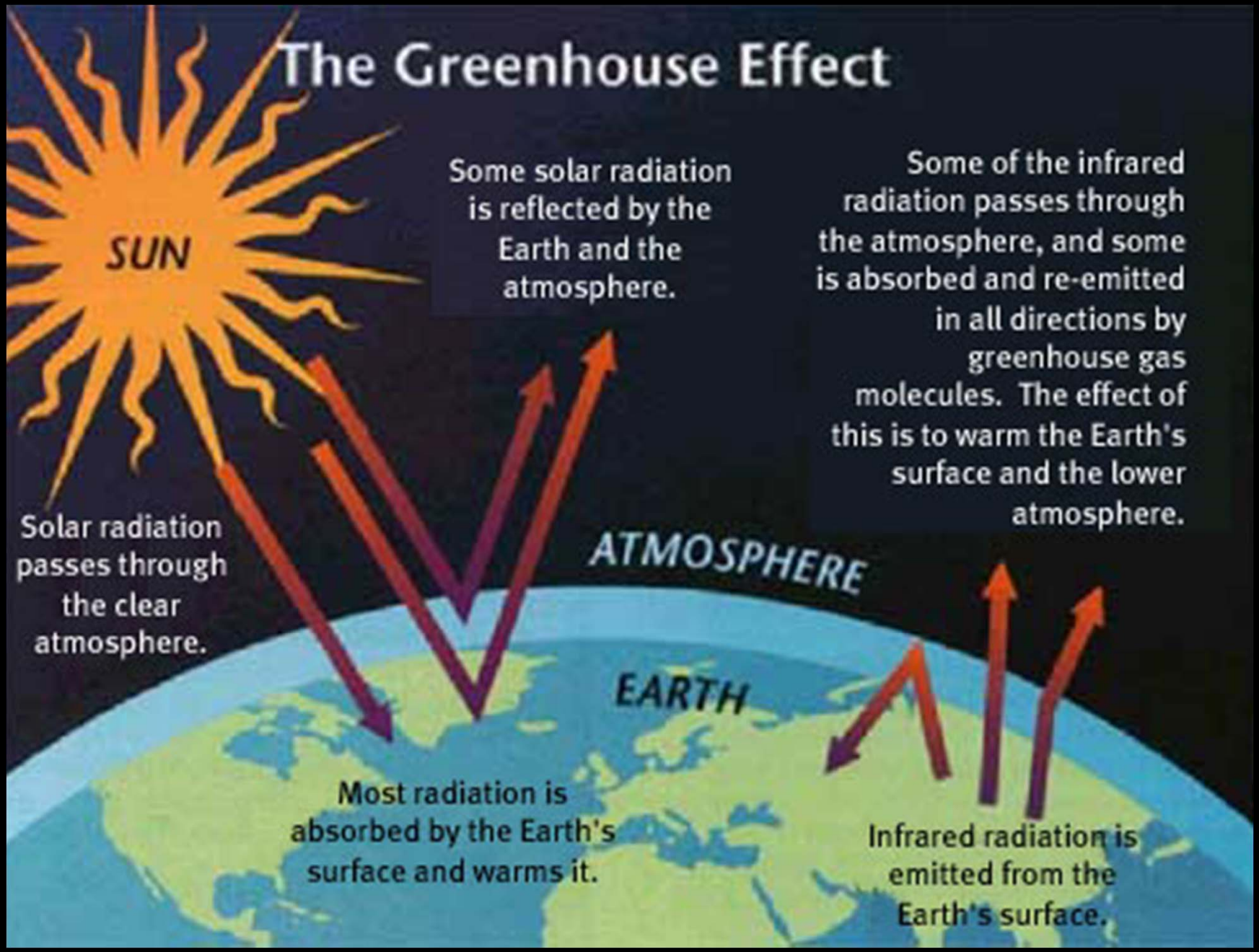

Los Angeles Region
Ground-Level Ozone
July 4, 2008
8:00 am PDT
Santa Clarita
14
San Fernando
118
Simi Valley
Agoura Hills
Malibu
Hollywood
405
Los Angeles
Santa Monica
Culver City
Pasadena
210
Alhambra
San Dimas
La Puente
Whittier
710
El Segundo
Compton
Palos Verdes
Long Beach
57
Anaheim
Santa Ana
Huntington Beach
Irvine
Newport Beach
El Toro
5
San Juan Capistrano
Santa Catalina Island
15
Ontario
Fontana
San Bernardino
10
60
Chino
Riverside
Banning
Corona
Perris
215
Lake Elsinore
Temecula
San Diego County

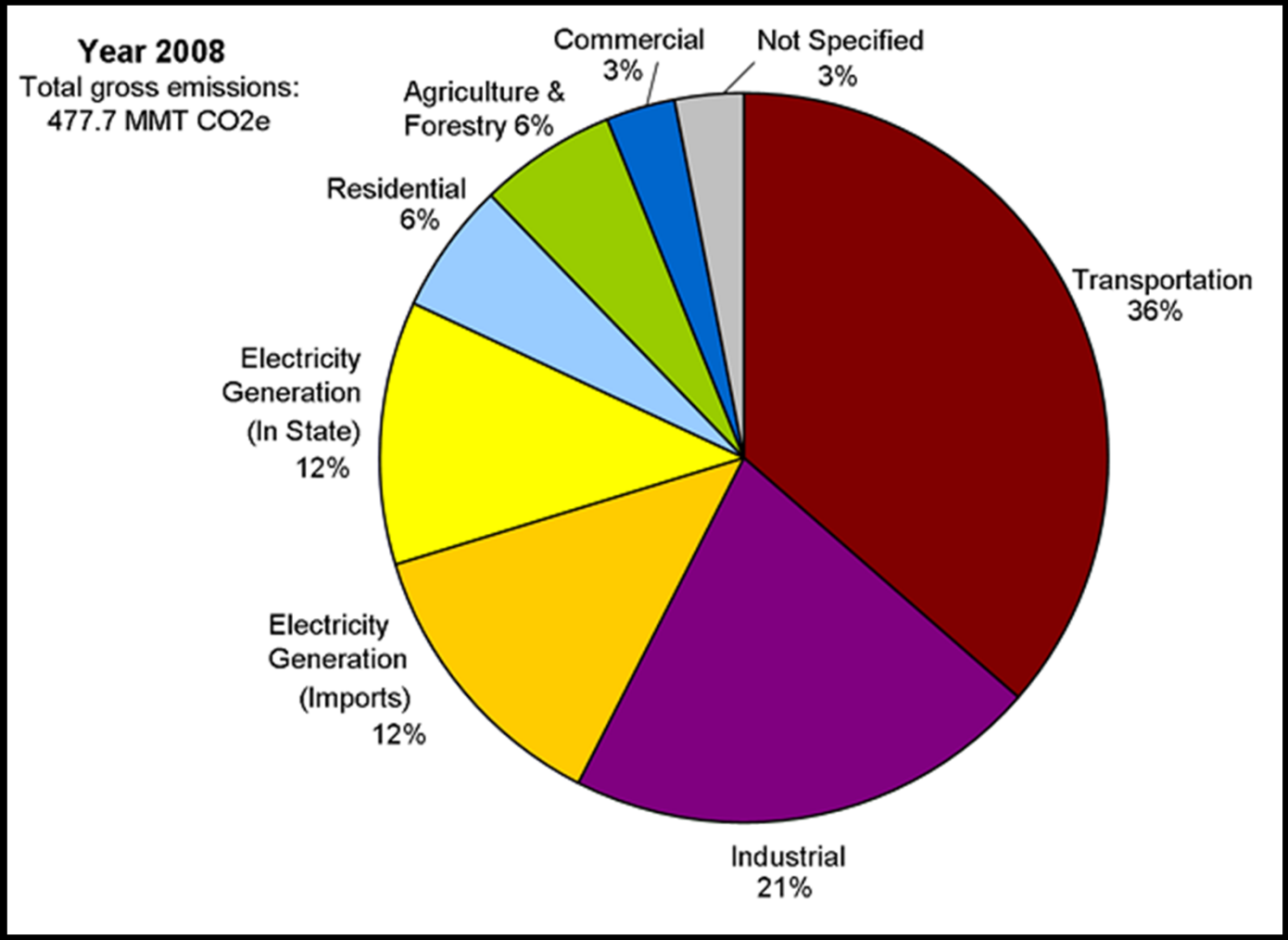
U.S. Smog Rankings

1	Los Angeles – Long Beach – Riverside, CA
2	Bakersfield – Delano, CA
3	Visalia – Porterville, CA
4	Fresno – Madera, CA
5	Sacramento – Arden-Arcade, CA
6	Hanford - Corcoran, CA
7	San Diego - Carlsbad, CA
8	Houston, TX
9	Merced, CA
10	Charlotte, NC

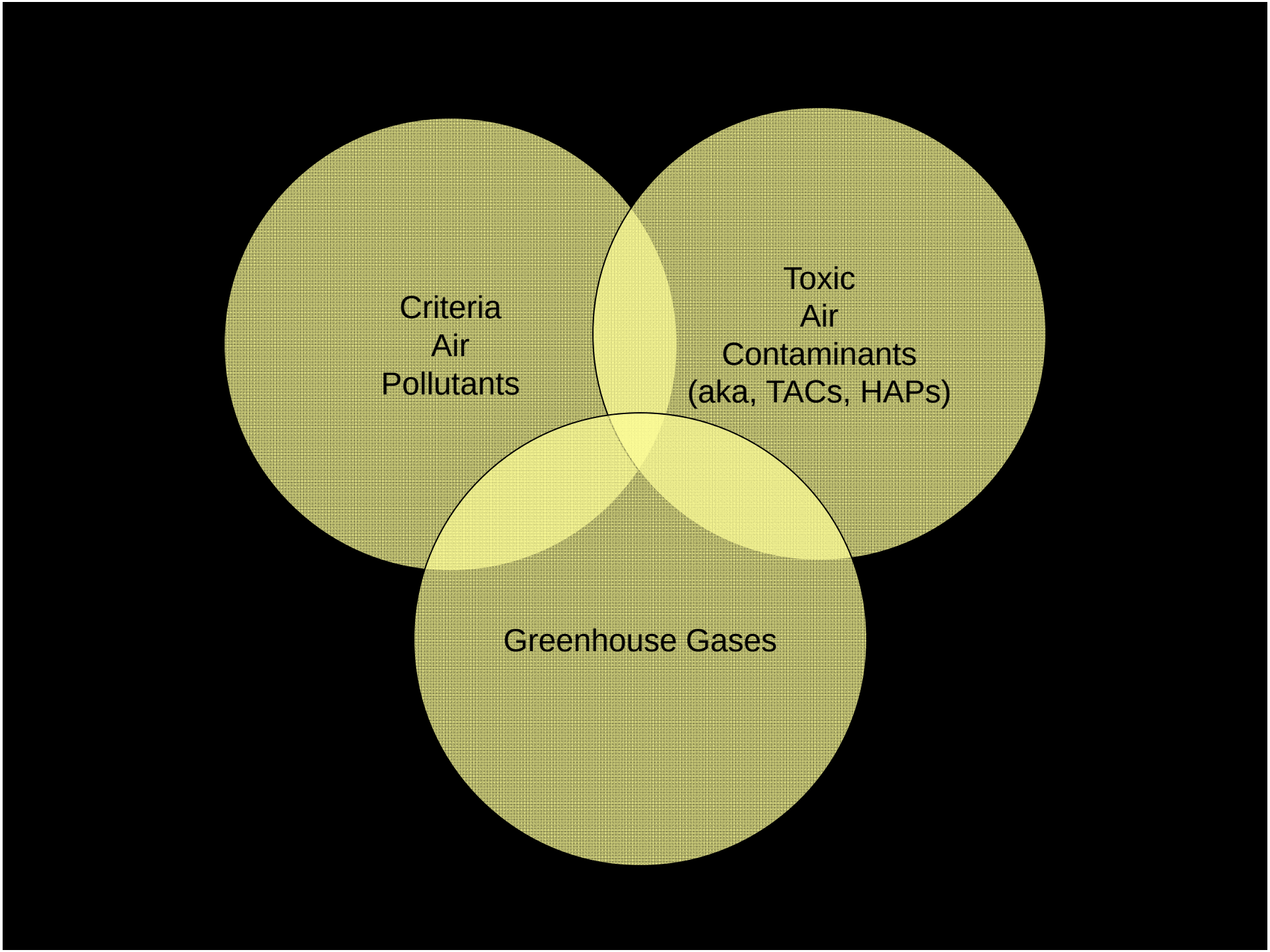
Mobile Sources Cause 80% of Smog Forming Air Pollution In L.A. Area




The Greenhouse Effect
SUN
Some solar radiation is reflected by the Earth and the atmosphere.
Some of the infrared radiation passes through the atmosphere, and some is absorbed and re-emitted in all directions by greenhouse gas molecules. The effect of this is to warm the Earth's surface and the lower atmosphere.
Solar radiation passes through the clear atmosphere.
ATMOSPHERE
EARTH
Most radiation is absorbed by the Earth's surface and warms it.
Infrared radiation is emitted from the Earth's surface.



28% of all California greenhouse gas emissions comes from cars


Criteria
Air
Pollutants
Toxic
Air
Contaminants
(aka, TACs, HAPs)
Greenhouse Gases

HYDROGEN
UC
LA

EXPERIMENTAL
ELECTRIC POWERED AUTO
DWP
ELECTRAUTO
SMOG - FREE ECONOMICAL

HERE COMES THE
VOLTS-WAGON
ELECTRIC-POWERED TRUCK
XP-240-V
EXPERIMENTAL
ELECTRIC-POWERED TRUCK