

Great Communities Create Less Air Pollution

How Do Transportation Choices Affect Health and Air Quality?

Cars, trucks, ships and other fossil fueled vehicles are a major source of air pollution. Air pollution impacts human health and global warming:



HUMAN HEALTH IMPACTS

- Over one quarter of particulate matter (PM) is directly emitted from cars and trucks on our roadways. Attaining the California PM standards would annually prevent about 6,500 premature deaths, or three percent of all deaths.
- Diesel exhaust particulate matter is toxic and contains over 40 known carcinogens. Long term occupational exposure to diesel exhaust has been associated with a 40 percent increase in the risk of lung cancer.
- According to the Centers for Disease Control, more than 70,000 deaths each year in the United States are attributed to air pollution.

GLOBAL WARMING

- Half of the greenhouse gases produced in the Bay Area come from transportation; mostly from our cars and SUV's.
- Technology alone will not fix this problem. Even if we have cleaner, more fuel efficient cars, we also need to reduce the amount we drive if we want to reduce global warming
- As we plan the future of the Bay Area to house our children as they grow up and find their own homes or aged-friendly communities for our parents, it is essential that we provide safe, efficient transportation that won't worsen our health or our planet.



Where we build new communities and homes is key to preventing air pollution impacts on health. We can either build next to freeways far from urban centers or we can build near public transit where the places people need to go on a daily basis are within walking distance or near another transit station.

- Children who live within 250 feet of a major road are more likely to have asthma and other lung diseases.
- Air pollution can actually slow the growth of developing lungs. In a study conducted in twelve southern California communities, children who lived within 500 meters of a freeway had reduced growth in lung capacity compared to those living greater than 1500 meters from the freeway.
- In the Bay Area there is disproportionately high number of lower income households and people of color living adjacent to freeways. Building affordable housing in safe, walkable communities next to transit stations are key to reducing this disparity.

Why Does Clean Air Matter?

Air pollution hurts the economy and causes diseases and premature deaths. In 2004, air pollution in California led to 2.8 million lost workdays and 1.3 million school absences. It also caused 1.7 million cases of respiratory illness, 9,000 hospitalizations and 6,500 deaths. The United States Clean Air Act of 1970 was passed because air quality has a huge effect on the health of Americans.

Poor air quality can cause variety of ill health effects:

- Aggravated asthma
- Reduced lung capacity
- Increased respiratory distress and susceptibility to respiratory illnesses
- Chronic bronchitis
- Respiratory and cardiovascular hospitalizations
- Lung cancer
- Premature death
- Magnified effects on children exposed to air pollution.

What is Air Pollution?

Air pollution is made up of many things including:

- **Particulate Matter (PM)**, or very small particles of dust, metal, acid and other materials that are in the air. The particles are labeled based on their size as 2.5 mg or 10 mg. PM2.5 are the smallest particles, PM10 are coarser dust.
- **Carbon Dioxide (CO₂)** and other greenhouse gases.
- **Ozone**, which is important in the upper atmosphere, but closer to the earth is a major component of smog.
- **Nitrogen Oxide (NO_x)**, which causes acid rain, haze, and when combined with ozone, smog.
- **Sulfur Oxide (SO)**, which also causes acid rain and can lead to particulate pollution.

California has aggressively reduced ozone levels, but PM has not been addressed as well. Approximately 89 percent of Californians live in areas that have unhealthy amounts of PM 2.5 pollution.

The harmful effect of air pollution on health, and especially on the lungs, is now beyond any doubt. Much of the blame can be laid on dangerous micro particles present in exhaust gases: PM 10 and PM 2.5. Due to their microscopic size, these dust particles penetrate deep into the lungs, causing serious respiratory disorders such as asthma and bronchitis.

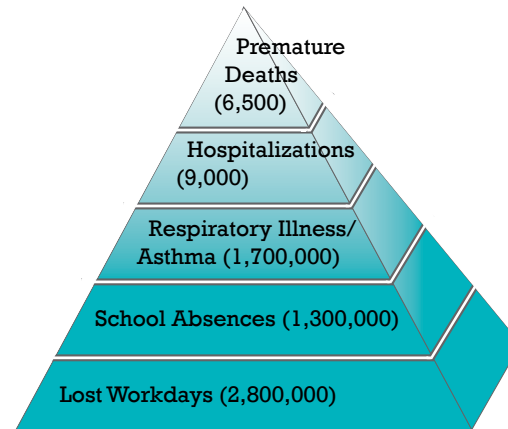
Land Use Planning Strategies to Reduce Air Pollution by Decreasing Driving

- Design communities near public transit to make it easier for people to drive less.
- Design communities with necessary shops and services near each other to avoid short car trips; Short trips and cold starts create more pollution.

Strategies to Reduce Human Exposure to Air Pollution

- Equip all new homes with proper HVAC systems with high-efficiency filters, particularly if they are close to significant vehicle traffic.
- Locate new homes at least 500 feet away from freeways and major truck routes.
- Plan new streets, particularly those that involve goods movement (trucking and freight trains), at least 500 feet away from homes. Situate distribution centers at least 1,000 feet away from homes.
- Look at the cumulative impacts of development, considering both transportation and non-transportation related sources of air pollution.

Yearly Health Costs of Air Pollution in California



Source: Recent research findings, California Air Resources Board, January 2004 and the American Lung Association <http://www.arb.ca.gov/research/health/fs/PM-03fs.pdf>.

When Atlanta limited car usage because of the 1996 Olympics, urgent care asthma visits decreased by 44% and hospital admissions for asthma decreased by 11%.