CWA State Air Quality Task Force Report

February 26, 2016 by Roberta Alderete, Santa Maria Chapter

California's Progress Toward Clean Air Report for 2015 from the California Air Pollution Control Officer's Association provides information that demonstrates a ongoing trend of air quality improvement throughout state. These improvements have occurred in spite of significant growth of the state's population, economy and registered vehicles over the same time period. Since 1990, California's population increased by 29 percent, registered vehicles increased by 32 percent and the economy grew by 83 percent. During the same time span, statewide emissions of smog-forming pollutants decreased by over 50 percent. In addition, emissions of toxic air contaminants and the resulting cancer risk to residents have been cut by 80 percent since 1990. The California Air Resources Board estimates that 63 percent of Californians now reside in areas that meet the federal standard for ozone, compared to only 24 percent in 1990.

These reductions are the result of a comprehensive air pollution control strategy implemented by local air districts and the state of California. Because of California's vehicle emissions requirements and motor vehicle standards, new cars and trucks emit only a small fraction of the pollution they did 20 years ago. Local air districts have adopted, implemented and enforced regulations that have reduced emissions from most industrial and commercial sources by 90 percent or more. Through state funding, local air districts also have provided hundreds of millions of dollars in incentives and grants to replace old, dirty diesel trucks and other equipment with cleaner burning models.

The quest for clean air continues. Challenges ahead seem daunting including California's current drought that significantly impacted levels of PM2.5; climate change threatens to undo years of clean air progress and ongoing medical research indicates the health effects of air pollution have been previously underestimated. As a result, the federal government has proposed once again to strengthen the health-based standard for ground level ozone. Achieving this new standard will require further reductions for smog forming pollutants on top of regulation that are already among the strictest in the nation.

Unhealthful air quality causes a myriad of health problems including respiratory and cardiovascular disease Exposure to fine particulates aggravates asthma attacks and can amplify other lung ailments like emphysema and chronic obstructive pulmonary disease (COPD), Increased hospital and emergency room visits result from increased risk of heart attacks and a higher number of premature deaths.

Conversely, as air quality improves, Californians are living healthier lives, according to a study published in the New England Journal of Medicine, showing stronger lung growth in youth.

Earlier studies have shown that the economic benefit of these expected health benefits is greater than the costs of air pollution control. The substantial benefit in cleaning our air was shown by a study in 2008 that estimated $22 billion annually in monetary value associated with air pollution health effects in the South Coast Air Basin and $6 billion annually I the San Joaquin Valley. The Bay Area ACMD's 2010 Clean Air Plan estimates up to 1.5 Billion in benefits annually in reduced medical costs, increased life expectance and reduced impacts of climate change as air pollution control measures are implemented. Multiple studies have shown that the economic benefits of reduced medical costs, increased productivity due to improved health and decreased mortality rates far exceed the cost or pollution control measures.

Challenges lay ahead as air districts continue to work to reduced emissions and improve public health.

The ongoing drought affects air quality leading to drier ground surfaces and more dust kicked up by vehicles and winds. Dust can boost concentrations of both coarse and fine particulates. This problem is worse in rural areas where there may be thousands of miles of unpaved roads.

Drought also increases the need for mechanical water pumping in lieu of natural irrigation and may pumps throughout the state still operate on highly pollution diesel fuel. Drier conditions also reduce the natural cleansing effects of rain. And the lack of windy unstable weather condition during storms can result in long episodes of stagnant air when particulate pollution builds up and reaches unhealthful levels.

Finally the drought has been linked to increase frequency and intensity of wildfires throughout the state. Wildfire smoke contains toxic air contaminants and can quickly create high levels of fine particulates. In addition, large fires can also boost ozone production.

California has successfully reduced risks from airborne toxic pollutants by 80 percent since 1990. We are learning more about how toxic air pollutants affect humans.

Research analyzed by the state's Office of Environmental Health Hazard Assessment (OEHHA) has found that previous methodologies underestimated the health risk of cancer-causing air pollutants. While emissions of these pollutants have been reduced, new methodologies suggest that continued efforts are vital to lower the risk of airborne toxics. As a result, individual air districts, CAPCOA and the ARB are working together to develop policies, rule amendments and outreach plans to address these new findings.

Tougher federal ozone standards are expected. In November 2014, the U.S. Environmental Protection Agency (U.S.EPA) proposed lowering the federal 8-hour standard for ground-level ozone to make it more health-protective. EEPA proposed changing the standard from the current 75 parts be billion (ppb) to a level in the range of 65-70 ppb. Since most populated areas do not meet the current 8-hour ozone standard, attaining a lower standard will be even more difficult and the challenges numerous.

The earth's atmosphere is getting warmer due to man-made emissions of carbon dioxide and other greenhouse gasses (GHGs). The increased atmospheric levels of GHGs along with other climate forcers such as black carbon are causing global warming. This has resulted in climate changes including rising sea levels, disruptions of natural resource availability, increases in the frequency and intensity of wildfires, severity of droughts, extreme weather patterns and more.

Climate change has a direct impact on air quality, primarily thorough increasing atmospheric temperatures and changing weather patterns. Research suggests that global worming caused by world-wide emission of GHGs impacts ozone levels. Global warming will result in high ozone episodes. The impacts of climate change have the potential to slow or reverse the progress made by local air districts and the state to clean our air.

Reference: California's Progress Toward Clean Air, a Report by the California Air Pollution Control Officer's Association