Summer Time Ozone

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Summertime ozone is pollution created by a mix of emissions combined with high temperatures and bright sunshine. This is ground level ozone and it poses serious health risks to those who are young, elderly or have pre-existing health problems. Ozone pollution can be difficult to reduce due to the critical role meteorology plays in its creation and intensity.

The Environmental Protection Agency is charged with setting the health-based standard for air pollutants both on an 8-hour and 24-hour average. The current ozone standard is .75 parts per million (ppm). The standard is proposed to the EPA by the Clean Air Scientific Advisory Council "CASAC", which bases their recommendation on national research that is relevant and timely. To assure the best science is used in a relevant timeframe, the standard is revisited every five years for each criteria pollutant.

To determine if an area is in compliance with the National Ambient Air Quality Standards (NAAQS), a mathematical formula is used that looks to the highest eight hour results for each. This information is gathered from a regional monitoring network. In Utah, 15 monitors are operated by the Division of Air Quality that record ozone pollution levels in real time. To determine compliance, the fourth highest ozone for the preceding three years is averaged to arrive at a single number. If that number is higher than the standard, the area will be designated as "non-attainment" for 8-hour ozone pollution.

All areas of Utah are currently in attainment for ozone pollution; however there are days when valleys along the Wasatch Front experience very high ozone pollution levels. Regardless of the EPA designation, this poses a threat to the health of our citizens. State regulators and policy makers recognize this and have taken steps to reduce pollution that creates ozone. Additionally, a public communication network has been developed to warn people about the adverse health impacts that can occur during high ozone events, as well as the threats to those who are most susceptible, the young, elderly and those with compromised immune systems or asthma.

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Summertime ground level ozone is created by the chemical reaction of automobile exhaust or hydrocarbons (VOCs, or volatile organic compounds) mixed with industrial emissions. This alone will not create ozone. The chemistry also requires bright sunshine and high temperatures. For those familiar with Utah's hot July and August days, the haze that hangs in the valley floor on those afternoons is ground level ozone. The hotter the weather, the higher the pollution level spikes. Ozone pollution has a daily cycle; levels will remain low in the early morning and rise with the

temperature of the day and then recede as night and temperatures falls. The good news here is that through education and real-time monitoring information, the public can continue to enjoy outside activities in the cooler parts of the day without exposure to high ozone.

Ozone pollution can impact health by irritating the respiratory system, causing coughing, throat irritation and an uncomfortable feeling in the chest. In some cases it can lower a person's resistance to diseases, colds and pneumonia. High ozone also can make people more sensitive to allergens and trigger asthma attacks. The most sensitive groups include the elderly, young and those with pre-existing breathing or lung impairment. The physical reaction to ozone pollution and the amount of pollution they can tolerate can vary greatly from person to person. The EPA standard of .75 ppm, while it is set as a national standard, does not mean that each individual's health is protected at that level. Depending on an individual's specific health, allergies, etc., they may have negative health impacts at a much lower level of pollution.

The Division of Air Quality within Utah's Department of Environmental Quality and the State of Utah have a strategy and regulatory controls to reduce pollution that leads to summertime ozone formation. These are some of the top strategies for reducing these emissions:

- Regulatory controls placed on industrial sources that limit the amount of NOx and VOCs emitted through industrial processes
- Endorsement and advocacy for clean Tier 3 fuels and vehicles
- State policy and legislation requiring a clean fuel fleet of state vehicles
- A State Energy Efficiency Plan
- A State Resource Manager to facilitate energy and fuel efficiency
- UCAIR partnership to communicate and educate the public on strategies citizens can use to reduce pollution

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