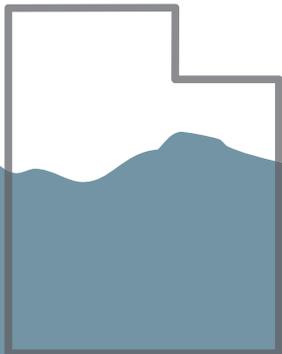




It's Up To All Of Us

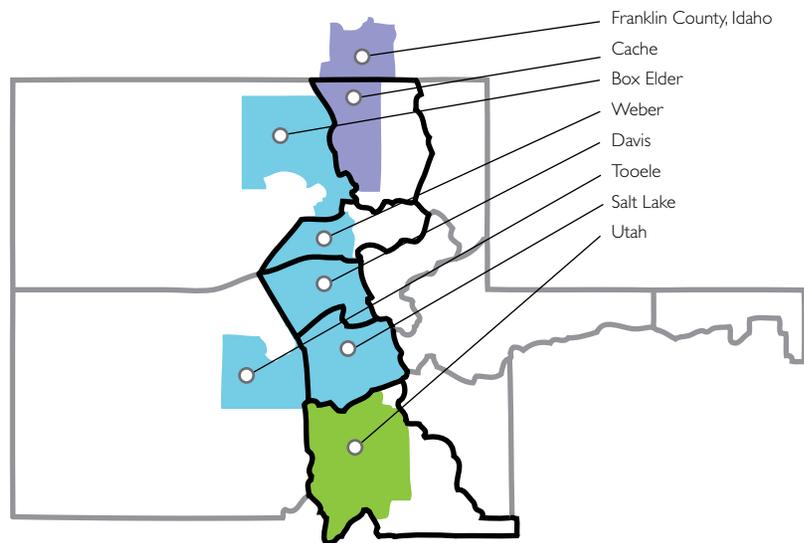
The Utah Division of Air Quality
PM2.5 State Implementation Plan
Information Booklet



PM2.5 Nonattainment Areas

NONATTAINMENT AREA BOUNDARIES

- LOGAN, UT/ID
- SALT LAKE CITY
- PROVO



Chemical Components of PM_{2.5} During Inversion Episodes

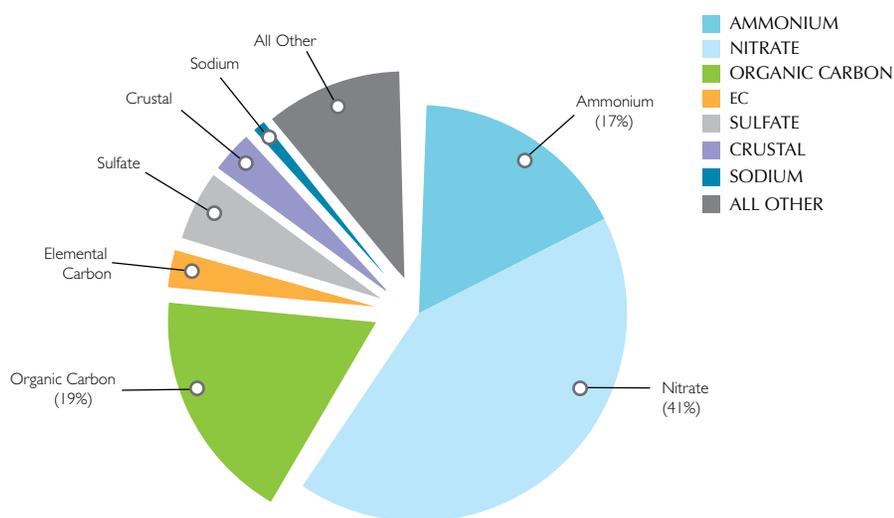


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UTAH'S PM_{2.5} SIP DEVELOPMENT PROCESS

The Division of Air Quality's guiding principles for developing a State Implementation Plan (SIP) for PM_{2.5} are:

- We will do what it takes to bring PM_{2.5} levels to the standard and protect public health
- We will work closely with EPA to develop an approvable SIP
- We will provide education and build partnerships to ensure inclusivity and an open and transparent process
- Achieving the necessary emission reductions will be very difficult, we need everyone working together to reduce PM_{2.5} levels to attain the health-based standard



DEFINING THE PROBLEM

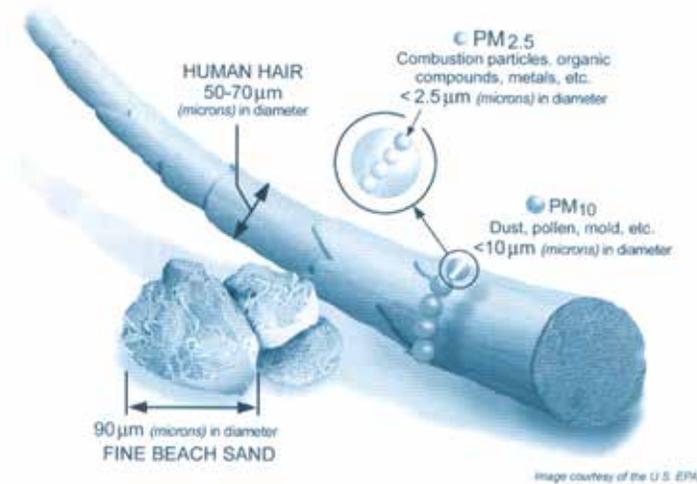
Most of the time air quality is good in areas along the Wasatch Front and in Cache County. There are times during the winter when these areas experience high levels of air pollution, levels that are among the worst in the nation. These high pollution periods occur during temperature inversions.

Temperature inversions are common features in mountainous areas with topography such as Utah's. Inversions happen during the winter when warm air, high pressure systems trap colder air in mountain valleys and keep it there. The cold air mixes with emissions from cars, home and commercial heating, and industrial processes to form fine particulate matter, commonly known as PM_{2.5}, in the atmosphere.

PM_{2.5} is composed of both primary and secondary particulate. Primary particulate—which makes up 25% of the overall problem—is emitted directly from a source as soot. The large majority of PM_{2.5}, secondary particulate, is created by a combination of precursor emissions that come from tailpipes, smokestacks, and chemical off-gassing and forms PM_{2.5} during atmospheric mixing.

Because of its size—2.5 microns or about 1/40th the size of a human hair—PM_{2.5} can become trapped in the lungs and exacerbate or cause

PARTICLES



health conditions such as asthma, chronic obstructive pulmonary disorder (COPD), and other respiratory related illnesses. It is a specific concern for the very young, the elderly, and anyone with respiratory disorders.

PM_{2.5} is regulated under the National Ambient Air Quality Standard or NAAQS. It is regulated by two standards, a 24-hour standard of 35 micrograms per cubic meter and an annual standard of 15 micrograms per cubic meter. All of Utah meets the annual standard. Unfortunately, all of Salt Lake and Davis and parts of Utah, Weber, Box Elder, Tooele and Cache counties exceed the 24-hour standard at times during the winter and are considered to be in non-attainment by the Environmental Protection Agency (EPA).

DEFINING THE PROCESS

Once non-attainment was designated for areas along the Wasatch Front and Cache County, a three-year process began to develop a State Implementation Plan or SIP to lower emissions and bring PM_{2.5} levels below the standard. Three major components were involved in the SIP development process—defining emission inventories, developing a model to mimic atmospheric conditions, and testing emission reductions strategies. To define emission inventories, Division of Air Quality scientists worked with industry and transportation planning organizations like the Wasatch Front Regional Council and Mountainland Association of Governments to gather industry and mobile emissions data. For other

pollution sources, scientists used calculated emission sets from EPA. The collective emissions data was used to understand what types of precursor emissions were emitted into the atmosphere and in what quantity.

Once the inventory was developed, scientists used a computer model developed by EPA and the National Oceanic and Atmospheric Administration to create conditions that replicate high pollution days in order to test reduction strategies. The strategies were compiled from other state's SIPs and through recommendations by industry, stakeholders, and workgroups that DAQ created to participate in the process. Once emission controls were identified they were run through the model to determine whether they would work to lower PM2.5 pollution.

DEFINING POTENTIAL SOLUTIONS

Past SIPs for Total Suspended Particulate and PM10—the predecessors of PM2.5—were successful in lowering pollution. As a result of these earlier plans, the “low hanging fruit” or easier solutions have been implemented. To reduce PM2.5 levels now many strategies with smaller, incremental improvements must be utilized.

Mobile Sources:

Reducing mobile source emissions for all of the non-attainment areas is a priority. Vehicles contribute over half of the emissions that lead to the formation of PM2.5 during winter inversions. Taking mass transit, reducing idling, driving less, and trip-chaining are all encouraged as individual strategies to lower emissions.

On a broader scale, the combination of new federal fleet standards and implementation of local plans to reduce trips and vehicle miles driven will result in as much as a 50% reduction in vehicle emissions by 2019.

In Cache County, the greatest emission reductions may come from a recommended new vehicle emission testing program. Vehicle emission testing is not proposed for Tooele or Box Elder Counties because of the limited impact it would have on air quality in these areas.

Point Sources:

Emissions reductions will come from large manufacturing sources as well. The SIP will require the installation of additional controls on these sources in addition to offsetting future emission increases through modifications to the existing non-attainment area banking and trading program. Offsetting requirements are stricter in Utah, Salt Lake and Davis counties where greater emission reductions are needed. In general, point sources have been regularly controlled through permitting and past SIPs. Their emissions decrease is 5% from the projected future emissions.

Area Sources:

“Area Sources” are population-based sources of emissions from general commerce, manufacturing, home and commercial heating and services such as food preparation and printing. Area sources are projected to grow in the future even with additional emission controls applied. In some cases reasonable controls were identified at a cost of \$3,000 to \$10,000 per ton of emissions reduced.

A total of 23 new area source rules are part of the SIP proposal. Some of the key proposed rules impact commercial bakeries, chain driven char broilers, printing and publishing, painting and degreasing, and the use and sale of wood stoves and wood boilers.

Outlying counties will require only the most cost effective strategies because the air quality computer models show a minimal benefit from additional emission controls in these areas.

Salt Lake and Utah counties are currently unable to show attainment by the end of the attainment window in 2019. The proposed SIP will contain a commitment to reach an emission target and will take the next year to identify additional strategies to reduce emissions from the larger area sources and through transit and fuels infrastructure improvements.

PUBLIC PARTICIPATION

Due to the diversity of emission sources in each of the counties in the PM2.5 non-attainment area, the Division of Air Quality (DAQ) implemented a first of its kind public involvement process to assist in the SIP development process. More than 100 participants from each of the six non-attainment counties met several times during the development process to provide ideas and recommendations for emission control strategies that would complement their own unique community needs.

Initial reductions resulting from workgroup recommendations reduced PM2.5 levels to within a few micrograms of the standard. DAQ is working to find the remaining reductions needed.

The public is invited and encouraged to participate during the public comment period, running from October 1-30, 2012.

The public can submit comments at any of the three meetings below or by submitting them to:

Public Comment:
Utah Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820

October 15:

Cache County Public Information & Public Comment Hearing
Bridgerland Applied Technology Center
1301 North 600 West
Rooms 171 D & E
Logan, Utah
11:00 a.m. Public Comment Hearing

October 16:

Utah County Public Information & Public Comment Hearing
Mountainland Association of Governments
Large Conference Room
586 East 800 North
Orem, Utah
11:00 a.m. Public Comment Hearing

October 17:

Salt Lake Non-attainment Area Public Information & Public Comment Hearings
Multi Agency State Office Building
195 North 1950 West
DEQ Board Room, Room 1015
Salt Lake City, Utah
2:00 p.m. Public Comment Hearing
6:00 p.m. Public Comment Hearing



**December
2012**

The PM2.5 SIP will be submitted to EPA in December 2012.

**End of
2013**

Recommended control strategies must be implemented by the end of 2013.

**End of
2014**

Implemented strategies must demonstrate success in bringing emissions below the standard by the end of 2014.

**End of
2019**

If the standard is not in 2014 but the SIP is working and progress is being made, annual extensions may be granted through 2019 to allow more time for strategies to achieve reductions.

Once success is demonstrated non-attainment designations will be reversed.

FOR MORE INFORMATION PLEASE VISIT:

Utah Division of Air Quality Resources:
Homepage: airquality.utah.gov

PM2.5 Background Information:
airquality.utah.gov/Public-Interest/about_pollutants/about_pm.htm

PM2.5 SIP Development Process:
airquality.utah.gov/Public-Interest/Current-Issues/pm2.5/index.html

Environmental Protection Agency Resources:
PM2.5 Pollution: epa.gov/air/particlepollution/

Clean Air Act:
epa.gov/air/caa/

National Ambient Air Quality Standards:
epa.gov/air/criteria.html

TOOLS AND RESOURCES TO IMPROVE AIR QUALITY:

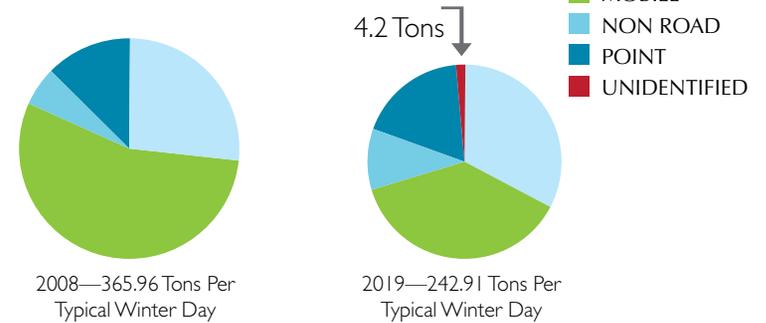
Utah Clean Air Partnership (UCAIR):
ucair.utah.gov

Breathe Utah:
breatheutah.org

Salt Lake Chamber Clean Air Champions:
cleanairchampion.com

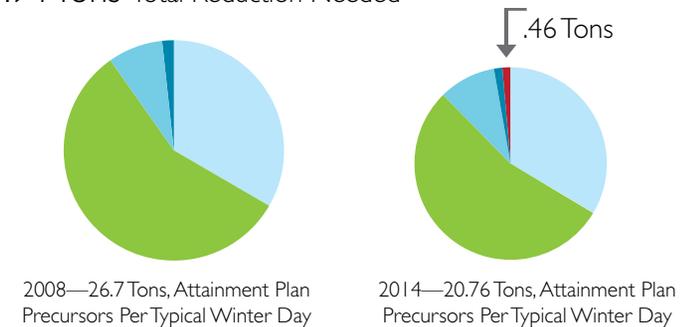
Salt Lake Non-Attainment Area

123.05 Tons Total Reduction Needed



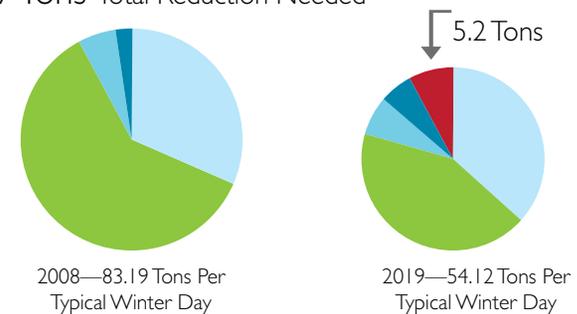
Cache County Non-Attainment Area

5.94 Tons Total Reduction Needed



Utah County Non-Attainment Area

29.07 Tons Total Reduction Needed





Utah Department of Environmental Quality

Division of Air Quality

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