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UTAH PRIORITIES PROJECT
20 YEARS OF WHAT MATTERS MOST

2024 PRIORITIES BRIEF #8

Air Quality

October 1, 2024

Air quality was ranked among the items listed as important in the 2024 Utah Priorities Survey. Those most concerned about air quality were higher-income voters, voters with graduate degrees, and liberal voters. While the issue is among the most important issues for Utah voters, only 37% are willing to pay 5% more in higher goods costs or taxes in order to improve air quality by 5%. Almost half of voters opposed the idea. (See Figure 1.)

A 2023 statewide poll identified Utah residents' thoughts on the environment. Close to 60% of respondents support strengthening environmental regulations in the U.S.[1] Over 75% of respondents indicated that protecting the environment should be more important than economic growth or even job loss. Poor air quality is among the environmental concerns that are especially prioritized by many Utah residents.[2] Close to 88% of responses to the poll indicated that they agree or strongly agree that air pollution is a serious problem that can cause harm. Roughly 65% of respondents shared that they felt they would likely experience health concerns over their lifetime due to air pollution.[3]

Summer and Winter Air Quality

Utah's geography and climate combine during the winter to create inversions – where a warm layer of air prevents atmospheric mixing. Little can be done to prevent or combat inversions – and inversions in and of themselves are not bad. The problem is the warm layer of air traps pollutants close to the ground.[4] As inversions can last days and even weeks, this accumulation of air pollution can build to dangerous levels. PM2.5 is the main component of Utah's wintertime air pollution and refers to microscopic particles or particulate matter.[5] In Utah's urban Salt Lake Valley, wintertime levels of PM2.5 exceed national air quality standards by an average of 18 days per year. Most exceedances occur in December, January, and early February, when strong, multi-day inversions are more likely to develop.[6]

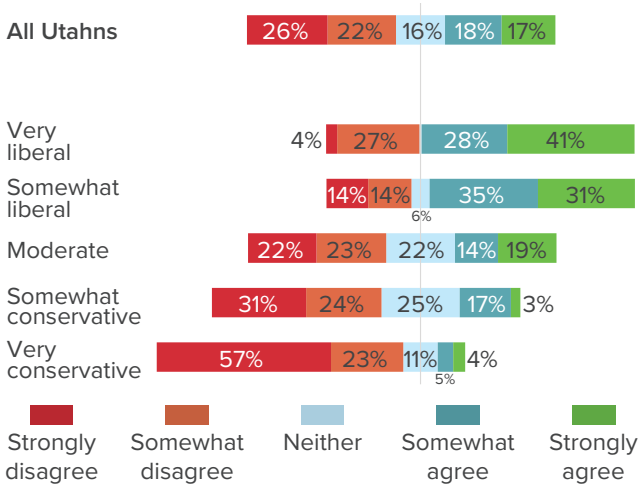
During the summer, compounds made of nitrogen and oxygen (NOx) and volatile organic compounds (VOC) can react to create ozone (O_3).[7] While ozone protects the planet in the upper atmosphere, the ozone layer at the ground level is harmful.[8]

Sources of Air Pollution

Sources of air pollution are categorized into three groups. Mobile sources, known as non-stationary sources, such as vehicles, trains, and aircraft, account for 48% of air pollution. Area sources caused by emissions from home heating, smoke from fires, and emissions from small businesses make up 39% of air pollution. Point sources are large stationary industrial or commercial facilities which account for 13% of air pollution.[9] (See Figure 2.)

Liberal voters are more willing to pay for cleaner air.

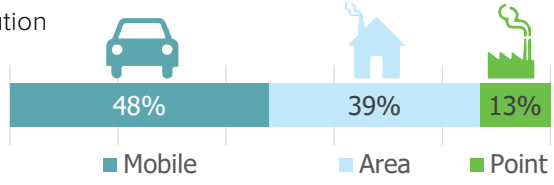
Figure 1: "Government should act to improve air quality by 5%, even if our taxes or costs of goods increase by 5%."



Source: Utah Foundation survey.

The main contributor to emission pollution is vehicles – known as mobile sources.

Figure 2: The various sources as percent of Utah's air pollution



Source: Utah Department of Environmental Quality

Health Problems

Air pollution in Utah causes between 2,500 and 8,000 premature deaths each year, decreasing Utahns' median life expectancy between 1.1 and 3.6 years.[10] It leads to an increased rate of emergency room visits for asthma-related issues.[11]

Various health problems are caused by poor air quality. Issues may include coughing and a sore and scratchy throat. One significant health effect is constricted and trapped air in the lungs' alveoli, which can lead to wheezing, shortness of breath, inflamed airways, and damaged lung tissues.[12]

With respect to ozone, people at most risk include those with asthma, children, older adults, and individuals who are active outdoors. Ozone may aggravate the frequency of lung diseases, including asthma or chronic bronchitis. Children are at the greatest risk of being exposed to ozone because their lungs are still developing, and they are most likely to be outdoors when ozone levels are high.[13]

Individual and State Level Actions

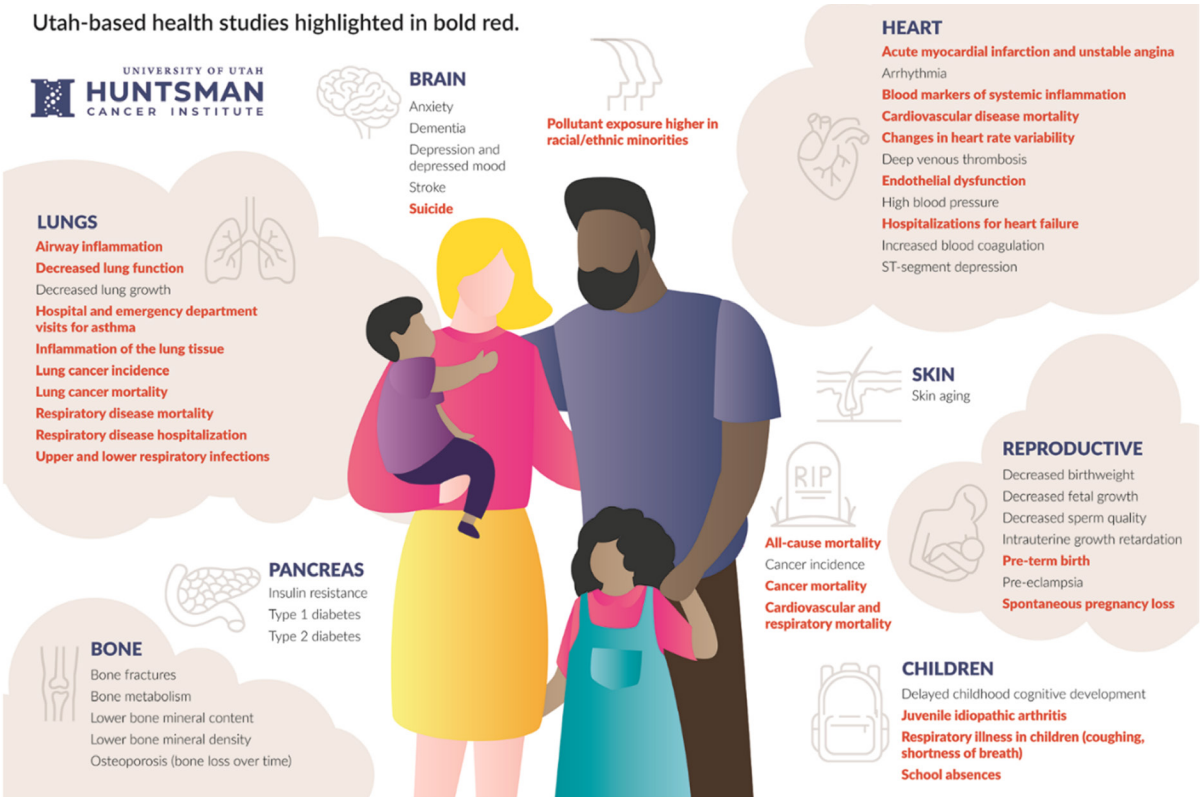
There are many individual actions that people can take to help improve Utah's air quality. These include turning down thermostats, carpooling, avoiding idling cars, and not mowing lawns during the hottest times of the day.

Just as individual actions are necessary to improve air quality, state-level influence is also required to combat these various issues. For instance, the 2016 Utah Legislature passed a bill requiring that any new water heaters sold in the state must be ultra-low NOx – which reduces NOx emissions by 75% compared to conventional water heaters.[14]

Cities can also have a large impact. For example, Salt Lake City and partners supported a gas-powered lawnmower exchange of 509 gas-powered mowers for electric options in 2021. Doing so was the equivalent of removing four tons of pollution from the airshed annually.[15]

There are a variety of health effects from air pollution.

Figure 3: Adverse health effects caused by air pollution



Source: Judy Ou, et al.[16]

Since 1945, leaders, legislators, and community members have relied upon the illuminating, independent, and nonpartisan public-policy research produced by the Utah Foundation to support informed decision-making on topics that matter most. As a 501(c)3 with broad community support and a 60-member board, the Utah Foundation exists to empower civic engagement as the foundation for enhanced quality of life for Utahns.

This research brief was written by Research Intern Micaela McElrath with assistance from other Utah Foundation staff.

Endnotes

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