Utah FOUNDATION

Utah Priorities Brief

The top issues facing Utah in 2012

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Priority Issue #7: Environment

Each gubernatorial election year since 2004, Utah Foundation organizes the Utah Priorities Project in partnership with the Hinckley Institute of Politics. The project is designed to engage the public and political candidates in serious dialogue on the most important issues facing our state. It begins with survey work that establishes what voters view as the top ten issues for the election year. This month, Utah Foundation releases a series of policy briefs of each of these top ten issues. In 2012, voters listed environmental issues as the seventh most important priority in the election year.

Throughout the four elections in which Utah Foundation has performed the Utah Priorities Survey, environmental issues have consistently been a top ten issue for voters. According to the 2012 survey, 53% of Utahns are concerned or very concerned with environmental issues in general, and 64% were concerned or very concerned with air quality specifically. Why is air quality on Utahns' minds? Likely because of the long stretches of inversion that Utahns along the Wasatch Front and in Cache County must deal with during the summer and winter months.

President Richard Nixon created the Environmental Protection Agency (EPA) by executive order in 1970.[1] This set the stage for the creation of a plethora of environmental legislation, rules and regulations, most importantly the Clean Air Act amendments in 1970 and the Clean Water Act in 1972. Through the Clean Air Act, the EPA regulates emissions from stationary and mobile sources.[2]

The federal government requires the Utah Division of Air Quality (DAQ) to ensure compliance with the EPA's air quality standards to monitor carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter. The DAQ operates 25 monitoring stations across the state to measure these pollutants. Utah has been compliant with carbon monoxide levels since 1994. Nitrogen and sulfur dioxide levels are well within compliance, the latter due in large part to technology upgrades at Kennecott Utah Copper and the state's steel refineries in the early 1980s and mid-1990s. Lead - as an air pollutant - is no longer a grave concern, due mainly to the complete phase-out of leaded gasoline by 1995.[3]

Utah has had a much more difficult time complying with EPA standards for ozone and particulate matter. Ozone is generally formed from combustion exhaust, which is chemically altered by high temperatures and sunlight. Though ozone is invisible, it is the main component in smog.[4] Particulates are small bits of solids and liquids that hang in the air and create haze.[5] They are formed from both chemical and mechanical processes. The chemical process is simply from fossil fuel combustion. Mechanical sources include fuel combustion, dust, fireplace and forest fires, mining, construction, vehicle wear (brakes, tires), and plant matter. The summer of 2012 has been particularly hazy due to it being one of the West's worst fire seasons on record, which have been worsening since the 1970s.[6]

For many years, the EPA regulated all particulates smaller than PM10 (which are about one-seventh the diameter of a human hair) as a group. Since 1997, the EPA has also individually regulated PM2.5 (one-quarter the size of PM10 or smaller) due to the negative health effects they cause. Studies also show that ozone and long-term (annual) particulate exposure can shorten one's life expectancy, typically through cardiovascular and respiratory effects. Short-term, high-level (24-hour) particulate exposure can cause death through cardiovascular and respiratory effects as well as heightened infant mortality rates.[7,8]

In 2012, the American Lung Association ranked cities and counties based on their annual and 24-hour PM2.5 levels and ozone levels utilizing data from 2008-2010. In terms of annual PM2.5 pollution, the five worst U.S. cities were in California, and none of Utah's cities were among the 25 worst in the nation. California cities also fared the worst for 24-hour PM2.5 pollution, though three Utah cities made this list: Salt Lake-Ogden-Clearfield (7), Logan (8), and Provo-Orem (11). Rankings for 24-hour PM2.5 improved for both Salt Lake-Ogden-Clearfield and Provo-Orem between 2005-2007 and 2008-2010, while Logan's worsened due to more days and higher daily levels with critical measurements. California also had the worst seven cities for ozone levels and 13 of the worst 25. Utah had no cities on the top 25 with ozone issues, and Logan ranked as one of the top cleanest cities for ozone.[9]

County rankings closely mirrored city rankings. Four counties made the American Lung Association's list for the top 25 worst 24-hour PM2.5 pollution in the nation: Salt Lake (9), Cache (10), Utah (14), and Weber (15). Cache County is one of the top 160 cleanest counties for ozone. Surprisingly, Uintah County ranked as the 21st most ozone-polluted county in the nation.[10] Although ozone levels are usually much worse in the summer, Uintah County experiences its high levels of ozone during winter inversions. An extensive air quality study is currently underway in the Uintah Basin to understand this phenomenon.[11]

Air Quality in Utah Counties, with American Lung Association "Grades"

	High Ozone Levels		High Particle Pollution Levels		
			24-Hour (short-term)		Annual
County	Days*	Grade	Days*	Grade	Pass/Fail
Box Elder	1.7	C	3.7	F	Pass
Cache	0.0	A	15.0	F	Pass
Davis	3.7	F	4.0	F	Pass
Salt Lake	5.0	F	19.3	F	Pass
San Juan	0.3	B	**	-	**
Tooele	1.3	C	1.8	C	Pass
Uintah	18.0	F	**	-	**
Utah	1.7	C	11.5	F	Pass
Washington	0.7	B	**	-	**
Weber	2.3	D	10.0	F	Pass

* Weighted average (based on level of pollution and number of days)
** Incomplete information
Source: American Lung Association, State of the Air, 2012

Since the 1970s, air pollution regulations have been tightening, and these rules have from time to time forced innovation. Based on DAQ data, air pollution in Utah seems to be declining, but work is underway to meet standards that have become more protective over time. To this end, the DAQ is in the final stages of completing its PM2.5 State Implementation Plan. Since the Wasatch Front and Cache County have not been in compliance with EPA PM2.5 standards, the DAQ is required to submit how the state intends to reduce fine particulate pollution, essentially by taking measures to decrease emissions in very specific, higher-polluting industries. A few of the industries under review are coatings companies (for metal, wood, fabric and others), large bakeries, asphalt and concrete processing, and printing.[12]

While some pollution reduction measures are costly to both individuals and local-economies, the EPA predicts the reduction in health care costs and pollution-related premature death outweighs such costs by a wide margin.[13] In addition, a state's failure to meet the standards could result in sanctions under the Clean Air Act that impact federal highway funding.[14]

A more recent pollutant to be regulated by the EPA is carbon dioxide (CO2). In 2007, the U.S. Supreme Court ruled that greenhouse gases are an air pollutant that the EPA can, and must, regulate under the Clean Air Act if it is found that such gases are harmful.[15] In June 2012, the U.S. Court of Appeals for the District of Columbia found that CO2 is one such gas, and that regulating the emissions from vehicle tailpipes and large industrial emitters is neither "arbitrary nor capricious." The basis for the ruling was that CO2 – which accounts for the lion's share of greenhouse gases – is altering the environment.[16] While CO2 is naturally present in the atmosphere, the amount being created is too great to be produced by natural means.[17]

In the last 20 years, the issue of greenhouse gases has become a partisan touchstone, especially concerning the question of whether human-created greenhouse gases cause global warming. Regardless of these political issues, the regulation of greenhouse gases will have an impact on energy creation, transportation and industry (which account for 40%, 31%, and 14% of CO2 emissions, respectively).[18] While opponents of stricter EPA regulations argue they will harm the economy, others hope these regulations will lead to technological advancements and air that is healthier for humans and the planet as a whole.

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1 Reorganization Plan No. 3 of 1970; http://www.gpo.gov/fdsys/pkg/USCODE-2011-title5/pdf/USCODE-2011-title5-app-reorganiz-other-dup92.pdf.
2 Clear Air Act 42 U.S. Code Section 7401; http://www.law.cornell.edu/uscode/text/42/chapter-85.
3 Utah Division of Air Quality 2011 Annual Report.
4 Ibid.
5 Ibid.
6 Climate Central, The Age of Western Wildfires, September 2012; http://www.climatecentral.org/wgts/wildfires/Wildfires2012.pdf.
7 American Lung Association, State of the Air, 2012.
8 Hazrije Mustafić, et al., Main Air Pollutants and Myocardial Infarction: A Systematic Review and Meta-analysis, The Journal of the American Medical Association, 2012.
9 American Lung Association, State of the Air, 2012.
10 Ibid.
11 Utah Division of Air Quality 2011 Annual Report.
12 Utah Division of Air Quality website; http://www.airquality.utah.gov/Public-Interest/Current-Issues/pm2.5/index.html.
13 U.S. EPA, The Benefits and Costs of the Clean Air Act from 1990 to 2020, March 2011.
14 U.S. Code, Title 42, Chapter 85, Subchapter 1, Part D, Subpart 1, 7509; http://www.law.cornell.edu/uscode/text/42/7509.
15 Massachusetts v. EPA (No. 05-1120), 415 F. 3d 50, reversed and remanded; http://www.law.cornell.edu/supct/html/05-1120.ZS.html.
16 Coalition for Responsible Regulation v. EPA (09-1322) June 26, 2012; http://www.cadc.uscourts.gov/internet/opinions.nsf/52AC9DC9471D374685257A290052ACF6/$file/09-1322-1380690.pdf.
17 U.S. EPA website; http://www.epa.gov/climatechange/ghgemissions/gases/co2.html.
18 Ibid.